DOCUMENT RESUME

ED 474 318	CE 084 632

AUTHOR	Lee, Young-Hyun; Cho, Jeong-Yoon; Tau, Alfred; Pereira, Clarence A.
TITLE	Vocational Training and Technical Qualification Systems in Korea and South Africa.
INSTITUTION	Korea Research Inst. for Vocational Education and Training, Seoul.
REPORT NO	KRIVET-DR-02-02
ISBN	ISBN-89-8436-406-1
PUB DATE	2002-02-00
NOTE	329p.; Product of an agreement between the Korea International Cooperation Agency (KOICA) and Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (INDLELA) in South Africa. For the executive summary, see: http://www.krivet.re.kr/krivet-htm/eh/index.html. Produced with assistance from the Department of Labor.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01/PC14 Plus Postage.
DESCRIPTORS	Academic Achievement; Academic Standards; *Comparative Education; Credits; Cross Cultural Studies; Delivery Systems; Developed Nations; Developing Nations; *Educational Assessment; Educational Change; Foreign Countries; *Integrated Curriculum; International Cooperation; International Educational Exchange; Interpersonal Competence; Job Skills; Job Training; Labor Force Development; Labor Market; Labor Needs; Learning Modules; Lifelong Learning; National Standards; National Surveys; Partnerships in Education; Postsecondary Education; Private Sector; Public Policy; Qualifications; Relevance (Education); School Business Relationship; School Holding Power; Secondary Education; Stakeholders; *Student Certification; *Technical Education; Vocational Education
IDENTIFIERS	Industry Based Skill Standards; *Korea; National Qualifications Framework (South Africa); *South Africa

ABSTRACT

A comparison of vocational training and technical qualification systems in Korea and South Africa shows both countries are responding to similar changes in economic and enterprise structures. South Africa's work experience learnership system is more desirable than Korea's more traditional separation between formal education and workplace training, although the former lacks complete theory/practice integration. Korea could learn from South Africa's shift from education for employment to education for employability. Conversely, private enterprise support for education, comparatively high educational levels and low rate of attrition from schooling in Korea indicated lessons that could be learned by South Africa. Among factors that could improve both systems are these: (1) flexible educational delivery systems; (2) implementation or continuation of a national qualifications framework; (3) ensuring relevance between education and training; and (4) greater cooperation between government, employer organizations, labor unions and educational institutions. (Suggested future cooperative projects between the nations are listed. Contains 83 tables, 26 figures and 63 references.) (AJ)

Reproductions supplied by EDRS are the best that can be made from the original document.

ED 474 318

DR 02-02

Vocational Training and Technical Qualification Systems in Korea and South Africa

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Young-Hyun Lee
Jeong-Yoon Cho
Alfred Tau
Clarence A. Pereira

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

M. Kang

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Korea Research Institute for Vocational Education and Training
Department of Labor, South Africa

BEST COPY AVAILABLE

CE 084632

DR 02-02

Vocational Training and Technical Qualification Systems in Korea and South Africa

Korea Research Institute for Vocational Education and Training
Department of Labor, South Africa

FOREWORD

The South African government request to the Korean government to assist in the upgrading of the Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (INDLELA) followed an agreement reached between the Presidents of the two countries in 1995. Korea International Cooperation Agency (KOICA) and INDLELA signed the MMM (Minutes of the Management Meeting) to implement the Project. One of the project components was a joint research on the vocational training and technical qualification systems in Korea and South Africa. KRIVET was selected as an institute responsible for conducting the research project.

The project was responding to growing demands for a skilled workforce in Korea and South Africa. A number of factors influence the ways in which the economies are organized in the two countries. Technological developments and dramatic changes in the accessibility of information have led to a demand for higher skills. Structural change from an economy based on the primary sector to economy based on the service sector require a highly skilled workforce. The demand for efficiency and effectiveness has resulted in changes in business organization with flatter and more integrated structures and a greater emphasis on team working rather than hierarchies. In view of all these changes, it is essential that the system of vocation training to upgrade the skills of individuals to be improved.

The objective of the study was to raise the standards of the vocational training and technical qualification systems in South Africa and Korea. Socio- economic contexts are examined by analyzing labor market policies, skills profiles and future skills demands of the two countries. The systems of vocational training and qualification systems are described by analyzing education and training systems, funding systems, training practices and qualification systems. A number of different elements of the experience of both countries are explored in the context of possible implications for the future development of vocational training and qualification systems.

The data were collected by means of historical, qualitative and quantitative methods. Site-visits were made to policy makers and training providers to collect information on training and qualifications and a joint-seminar between INDLELA and KRIVET was delivered to present the research findings. Comments from participants of the seminar were incorporated into the implications section of the report. Both countries were also able to benefit from the other's experience in vocational training and qualifications.

KRIVET is engaged in joint-research with several organizations including NCVER(Australia), BIBB (Germany), and CEREQ (France). It is hoped that this report will contribute towards promoting joint research on vocational education and training and qualifications among research organizations.

In conclusion, and on behalf of KRIVET, I would like to thank INDLELA for its cooperation in implementing the project and the researchers involved in the project for their dedication and commitment to the project.

Moo-Sub Kang
President, KRIVET

Executive Summary

The objective of this study is to examine the vocational training and technical qualification system in Korea and South Africa. The analysis focused on the relationships among economic policy, education and training system, technical qualifications.

Synergies were identified between the Korean and South African systems to assist each country improve their vocational training and technical qualification systems

Vocational education and training system

The largest element of Korea's system of vocational education and training is the system of vocational education at schools. Initial training (pre-employment training) is provided at the senior secondary level (vocational high schools) and post-secondary level junior colleges. Formal vocational education is administered by the Ministry of Education and Human Resource Development.

In 2001, there were 759 vocational high schools with a total enrollment of 651,198 which accounted for about 34.1 per cent of total high school enrollment. Most vocational students were taking programs in senior high schools of business/commerce and technology.

The implementation of the Second Educational Reform (including vocational education reform) Program proposed by PCER and the enactment of the *act on promoting workers' vocational training* in the 1990s made vocational education and training an

integral part of education and training in Korea.

Various measures have been undertaken to implement the reforms to establish a lifelong learning society. **The legal foundation for 'the era of open and continuing education' has been prepared. The legislation on the Credit Bank System in 1996 was enacted to allow part-time registration in colleges on a trial base.**

Programs have been introduced to expand opportunities for employed workers to continue to study in higher education institutes. Polytechnic universities provide open and flexible curriculum and class schedules and are open to employed adults. Priority in selection is given to persons with experience in industry. The technical colleges (Universities) operated by companies are under review to facilitate their being recognized as formal higher education institutes. In order to encourage workers to upgrade their knowledge and skills, the government enacted the *act on promoting workers' vocational training*. As a result, the number of workers trained has increased since the implementation of the new training policy. In addition, most enterprise training schemes include 'advanced (upgrading) courses', instead of basic training as tended to be the case under the levy system.

Qualification system

The qualification system in Korea can be divided into national qualification and private qualification. National qualification consists of national technical qualifications and other non technical national qualifications. Private qualification also comprises two parts, authorized and unauthorized.

The current national technical qualification system is classified into 5 different levels:

Professional Engineer, Master Craftsman, Engineer, Industrial Engineer, and Craftsman. The Service group is divided into Business Management and Other Services. Busiesns Management has 3 levels(geup) and the Other Services group item has under it the two levels of Master Craftsman and Craftsman in 2 fields of work.

National technical qualification is currently under the control of 15 different government organizations, but the overall management is headed by the Ministry of Labor under the NTQ Act. The undertaking of the formulation of exam. questions, the certification process, registration are commissioned to the Human Resources Development Service of Korea (HRD Korea) and KCCI under Implementation Decree of the same Act.

National Technical Qualification System has close relationships with Credit Bank operating by auditing Ministry of Education and Human Resource Development. Credit Bank System seeks to improve upon the limitations of formal education by recognizing the various field experiences and training accumulated by an individual outside the school environment. It also provides motivation for life-long learning to people who have previously had not access to higher education. It was against this backdrop that the Credit Recognition Act was enacted, allowing national technical qualification acquisition to be equated with credits from a formal education institution.

Meanwhile, in order to activate the private qualification system, the Korean government enacted the Basic Qualification Act on March 27, 1997. Pursuant to this law, a state-authorized private qualification system, drafted for the purpose of recognizing important and necessary private qualifications through a set of evaluation processes, was introduced. The task of evaluating applications of private qualifications for government authorization which started in full-scale in 1999 was undertaken by the Korea Research

Institute of Vocational Education and Training(KRIVET). Now Basic Qualification Act is going to revise the structure and contents so as to make supplement the aspect of implementation of authorization.

South Africa is currently experiencing a shift in thinking from education for employment—developing the ability to do a specific job—to education for employability—developing the ability to adapt acquired skills to new working environments. This change in perception is leading to a broader transformation towards a longer-term HRD vision for life-long education through an accumulative credit-based qualification framework rather than the previous pass-fail system.\

The main feature of the new framework for national qualifications is its emphasis on the notion of learning outcomes. In fact, a paradigmic shift is taking place in the South African education system, moving away from the previous focus on the content of curriculum to one that stresses outcomes. Outcomes-based education and training(OBE).

The need for an outcomes-based system of education and training are driven from both domestic and international sources. Internally, in South Africa, the two main problems of the previous qualification system have been identified as unequal *access* and a lack of *transferability.* External imperatives, in the form of global trends, have heightened the recognition that traditional definitions of knowledge and education are increasingly undergoing system-wide changes in various parts of the world. At the center of such developments is the emphasis put on competence and outcomes. South Africa has also embraced these concepts through its introduction of the NQF, which stresses applied competence, defined as "the ability to put into practice in the relevant context the learning outcomes acquired in obtaining a qualification".

The NQF specifies the levels, bands and types of qualifications and certificates in education and training. It is composed of eight levels and can be divided into the three bands of higher education (levels 5-8), further education (levels 2-4), and general education (level 1), with levels 1 and 8 regarded as open-ended.

The unique feature of the South African NQF is its credit-based system of learning. It not only connects academic and vocational qualifications, but also acts as the chief facilitator of lifelong learning based on learning outcomes. Learning is recognized when a learner attains the required number and range of credits at a specific level of the NQF.

Key words in the outcomes-based education and training system in South Africa are *standards* for NQF qualifications and *quality assurance* for learning and assessment provision. Quality indicators such as integration; learning outcomes; access, mobility, and progression; and personal national development are some of the criteria for judging the soundness of education and training. Learning and learning assessments are implemented based on these objectives.

Implications from the Korean-South African experience

Although there are differences in the economic and enterprise structure and industry profiles of the Korean and South African economies, both economies are currently facing changes of a similar nature, particularly in the growth of employment in the service sector and changes in the nature of work.

Therefore, the vocational education and training systems in both countries need to be responsive to economic change. Both countries need to give more attention to integration of formal education and workplace learning as

1. Implications from the South African experience

* Integration of vocational education and training

In South Africa, education and training is integrated through a new learnership system. A learnership is composed of both structured learning and structured work experience, which are designed to complement each other in an integrated structure. It is critical that within each, theory and practice are combined – so that there are practical applications within the structured learning, and theoretical reflections within work experience. It is not simply a matter of timing the theoretical curriculum of structured learning to match the practical applications in the workplace. Each must take place within the other.

In Korea, formal education and workplace training has traditionally been separated. So the government has been trying to introduce a system to integrate workplace learning into the formal education system. The South African learnership system could be a model for Korea.

* Flexible delivery and the modularization of training delivery

The modularization of VET programs involves breaking up longer courses into shorter programs (such as subjects) that are capable of assessment as each element or subject is completed. This has promoted the enrollment of a more diverse range of students in VET, particularly people who are already employed. Modules have encouraged people to take shorter bouts of training to meet a particular skill acquisition need, without requiring them to immediately enroll in a full VET course leading to a qualification.

* The National Qualifications Framework (NQF)

The NQF was designed to provide consistent recognition of the outcomes achieved from education and training across all sectors of senior secondary schooling and universities. The NQF system in the VET sector is designed around a set of competency standards that need to be achieved in different training programs, rather than qualifications being set according to the amount of time taken to undertake a course of study. Thus, different people will take different amounts of time to complete any given VET qualification.

Students who successfully complete the requirements of a recognized course or program qualification with a registered training organization are entitled to a certificate or diploma under the NQF confirming this. Status or credit for subjects or units of competency completed with another training provider, or through recognition of prior learning, should be taken into account when determining entitlement to a recognized qualification. In most instances the certificate is issued by the registered training organization on application by the student.

The Korean government is trying to integrate workplace learning into the VET system through the amendment of the vocational qualification system. The South African experience suggests that the reforms take place in the broader context of the VET systems in Korea.

* Relevance of Education and Training

In order to ensure relevance of education and training, SETAs have to identify skills needs. The skills needs could be shortages or gaps, and even those arising from employer practices.

SETAs identify skills needs through the development of a Sector Skills Plan. The Sector Skills Plan is a research based document which outlines skills needs of an economic sector, industry or professional/occupational group. The needs identified become the basis for the development of learnership, skills programs, or qualifications. The process of developing the Sector Skills Plan is done in a collaborative manner by all stakeholders and key players in the relevant sector, industry or occupational group. The stakeholders at least include employers and organized labor.

Lack of a similar mechanism to identify skills needs to South Africa's is a major deficiency in Korea's current VET system.

* Participation of Social Partners in VET

Today South Africa and other advanced nations adopt a cooperative approach, on which include the involvement of employer associations, labor unions and other organizations. Together with the government ensure that VET is responsive to the changing demands of the labor market.

At the national level, the National Skills Authority (which is an advisory body to Labor monitors on skills development policy and strategy) is made up of organized employers, organized labor, government departments and community group, as well as education and training providers. At the sector level, the SETAs comprise organized employers and labor, and where applicable relevant government departments.

The participation of stakeholders ensures that all policies and strategies are enriched through diversified input, but also that policies and strategies enjoy wide support of those to be affected.

2. Implications from the Korean experience

Given the similar forces of change operating in the two economies, South Africa, in responding and adapting to these changes, can learn from recent Korean experience. Traditionally, private demand for education in Korea has been very strong. The high economic growth in the past three decades was characterized by substantial investment in human capital.

The government established a vast economic plan in 1960s and restructured the vocational education and training system in order to supply the manpower necessary to implement the plan. As a result, most of the formal technical education was provided within the state education system, and systematically planned and standardized.

- High education level

The average educational level of the population in Korea is already relatively high compared to those in other industrialized countries. In 2000, middle schools, even though secondary education is not compulsory, enrolled 99.9 per cent of the appropriate age group. About 99.6 per cent of middle school graduates moved on to high schools. Nearly 83.9 per cent of academic high school graduates and 42.0 per cent of vocational high school graduates advanced to institutes of higher education. Educational levels in full-time schooling and advancement to higher education in Korea are the highest in the world.

This high level of educational enrollment is in stark contrast to South Africa's relatively low level of school attendance. Until educational enrollment levels are raised, South

Africa will continue to suffer from a shortage of a skilled labor force

* *Outcomes from training provided by employers*

Although proportion of employers providing training to employees is comparable between Korea and South Africa, the types of training provided and the outcomes for employees differs between the countries. Korean employers are much more likely to also provide training that will assist an employee to gain the higher-level skills to enable an employee to gain a promotion. On the other hand, training undertaken by South African employees are usually relevant to the tasks performed in the current job. South Africa could do well by developing a training culture which encourage employer sponsorship of training in higher-level skills.

* Encouragement of enterprise training–the Employment Insurance Scheme

Korea had operated levy schemes to encourage employers to invest in training. These schemes required minimum levels of employer training expenditure as a percentage of wages or contributions for collectively funded training. These schemes had been disbanded by 1995.

The number of workers trained has increased since the implementation of the new training policy under the Employment Insurance Scheme (EIS). Notably, most in-plant training schemes include 'advanced' courses, instead of basic training as tended to be the case under the levy system.

* *Lifelong learning*

Korea has low rates of attrition from schooling before the completion of secondary school and high rates of entrance to tertiary education. Although increasing school retention rates has been a focus of South African governments, South African retention rates are much lower than those of Korea. Based on the higher school retention rates in Korea, it would appear that Korean students are better prepared for operating in an environment where lifelong learning is norm.

* Vocational Qualification System

(1) Promotion of lifelong learning through a technical qualification grading system in the field of technology for workers who don't have an academic background. All workers and students can apply for the grade of craftsman which is the basic qualification grade under the vocational qualification system, connecting to higher qualification grades. There are no barriers in applying for the grade of craftsman. But higher qualification grades than craftsman have eligibility criteria, in terms of the period of practical experience, academic achievements and qualifications acquisition.

(2) Connection of vocational qualifications with credits in colleges and universities through a Credit Bank system.

* Implementation of Qualification Exam Testing

(1) Operation of item banks to systemize the management of questions

(2) Introduction of appropriate new qualification items according to industry demands

(3) Preparation of written and practical exams separately. Also practical exams consist of three types of exam according to the characteristic of qualification items, that is, written, mixed (written + practical), and practical testing.

(4) Construction of organization and operational system to deal with a massive number of applicants (over 3 million per year)

(5) Operation of own branch in regional area

3) Suggestions for Future Role of INDLELA

(1) Center for recognition, monitoring and assessment

- Recognize and monitor the assessment center which is going to be established in each SETA

- Recognize and monitor the assessment centers located in regional areas
- Conduct the assessment on the qualification items which can not be operated by SETA appropriately.

(2) Center for implementing vocational education and training through learnerships

- Prepare training courses for trainers
- Provide training courses for assessors, moderators, verifiers
- Prepare training courses for job analysts and skills development facilitators
- Provide training courses for creating SMME (including self- employment)

(3) Center for research on qualifications and learnerships

- Develop new qualification items and assessment methods
- Preparation of testing for assessor qualifications
- Devise the strategy for expanding and supporting learnerships

4) Future Cooperation between Korea and South Africa

(1) Mutual recognition of Korean qualifications and South African qualification in the field of engineering

- Professional engineer through EMF
- Engineer (Korea) vs. Technologist (South Africa)
- Industrial Engineer (Korea) vs. Technician or Artisan (South Africa)

(2) Exchange personnel to create new idea in the field of qualification system and testing

- Exchange of ideas on qualification system and operation
- Cooperative development of new testing methods to meet the demands from

industry

- Development of strategies to achieve close linkage between vocational education and training and qualification systems through learnerships

Table of Contents

I. Introduction 1

1. Background of Study 1
2. Purpose of the Study 4
3. Organization and Contents of the Study 4
4. Data and Methodology 4

II. Country Profile and Socio-economic Backgrounds 7

Korea

1. Country Profile 7
2. The economic and labor market Contexts 8
3. Current skill levels 16
4. The impact of demographic change 18

South Africa

1. Country Profile 20
2. The economic and labor market Contexts 22
3. Current skill levels 36
4. Future Skill Demands 39
5. Inequalities in South Africa 43
6. Disease Impacts on the Economy 46

III. Vocational Education and Training 49

Korea
1. Education system 49
2. The vocational secondary education system 53
3. Formal post-secondary vocational education 55
4. Vocational training 64

South Africa
1. Education change and transformation: key strategic shifts 1994-2001 78
2. Innovation and change in education: laying the foundation of the post-apartheid education and training system 86
3. Education system 92
4. The Human Resource Development Strategy 113

IV. Vocational Qualification System 131

Korea
1. The Structure of Korean Qualification System 131
2. Historical Development of the Technical Qualification System 132
3. Enachtment of the National Technical Qualification System 150
4. The Structure of NTQS 152
5. Administration of Certification Process 161
6. Formulation and Administration of Exam Questions 165
7. Credit Bank System 169
8. Authorization of Private Qualification by the Goverment 171
9. Analysis of Test Results of the National Technical Qualification System 173
10. Cross-Border Recognition of National Technical Qualifications 176

11. Current Efforts on Upgrading the National Technical Qualification System 188

South Africa

1. Historical Context 189
2. Introducation to New Qualification System(NQF) 192
3. The Structure of the National Qualifications Framework(NQF) 202
4. Standards Setting 209
5. Level Descriptors in the NQF 221
6. Engineering Qualification System 227
7. Analysis of Testing Results by INDLELA 236

V. Summary and conclusion 241

1. Comparison-in contexts of vocational training and technical qualifications in Korea and South Africal 241
2. Implications from the South African – Korea experience. 248

References 257

Appendix 261

List of Tables

Table 2.1. Background statistics ... 9

Table 2.2. Share of GDP by industrial origin, 1970-1999 ... 10

Table 2.3. Labor force by industry ... 11

Table 2.4. Distribution of the employed by worker status ... 12

Table 2.5. Employment trend, by age ... 14

Table 2.6. Age profile of the Korean workforce aged 15 go over 55 by industry sector, 1998 ... 14

Table 2.7. Unemployment rates by age and gender ... 15

Table 2.8. Labor force force by educational attainment ... 17

Table 2.9. Changes in occupation, 1993-99 ... 17

Table 2.10. Population profile of people, by gender ... 19

Table 2.11. Background statistics ... 23

Table 2.12. GDP share by industry ... 24

Table 2.13. Labor force per industry ... 25

Table 2.14. Formal Emplyment Trends By Sector and Occupation: 1970-1995 ... 26

Table 2.15A. Workforce Profile(All Companies) ... 27

Table 2.15B. Workforce Profile(0-49 Employees) ... 28

Table 2.15C. Workforce Profile(50-149 Employees) ... 28

Table 2.15D. Workforce Profile(150-499 Employees) ... 29

Table 2.15E. Workforce Profile(500-1499 Employees) ... 29

Table 2.15F. Workforce Profile(Employees 1500+) ... 30

Table 2.16. Distribution of GDP between 3 sectors 1990 & 1999 ... 33

Table 2.17. Types of informal employment ... 34

Table 2.18. Unemployment rate in the youth labor market ... 35

Table 2.19. Emigration according to occupation 36
Table 2.20. Highest education level of those aged 20years or more
by population group and sex, October 1999 37
Table 2.21. Formal employment levels by NQF qualification 39
Table 2.22. Persons employment according to qualification level and race 39
Table 2.23. Change in the Occupational Structure of Employment in S.A,
1965-2003 41
Table 2.24. Annual Household Income in Rands, 1996 44
Table 2.25. Student headcount in HET by population group, 1993-1999 45
Table 2.26. Key Human Development Indices, 2000 47
Table 3.1. Current Status of School in Korea 51
Table 3.2. Number of vocational high schools and students 54
Table 3.3. Number of junior college student by program 56
Table 3.4. Current status of technical colleges(universities) 58
Table 3.5. Participation rate of adults in post-secondary vocational education 60
Table 3.6. Annual pacticipation rate in aduts learning programs,
age and gender, 1996 61
Table 3.7. Annual pacticipation rate in aduts learning programs,
Educational level and occupation 62
Table 3.8. Participation rate of adults in vocational training 63
Table 3.9. Proportion of people undertaking initial training and further training,
1990-99 71
Table 3.10. Training programs for the employed participation and expenditures,
1999 73
Table 3.11. Beneficiaries of in-plant vocational training programs, by firm size,
1999 74
Table 3.12. Recipients of in-plant vocational training, by program, 1999 75
Table 3.13. Outcomes of training programs for the unemployed, 1999 77

Table 3.14. Characteristics of participants in the program of re-employment training for the unemployed, 1999 77
Table 3.15. Education in South Africa a global picture 95
Table 3.16. Total number of learners in ordinary public and independent schools per grade compared with the appropriate age group in the population, 1999 98
Table 3.17. Matriculation enrolments and pass rates 103
Table 3.18. Throughput rates from school to HET in 1995-1998 104
Table 3.19. Age distribution of total enrolment of South African and Australian technical college learners, 1998 108
Table 3.20. Emrolments in technikons and universities combined 1998 109
Table 3.21. Gross participation rates by population group (age cohort 20-24 years old) 110
Table 3.22. Change in enrolments in HET, 1993-1999 110
Table 3.23. Changes in enrolment, 1995 compared to 1999 111
Table 3.24. Transition in the apprenticeship labor market, 1960s-2000 112
Table 3.25. Persons trained according to occupational level by Gender 118
Table 3.26. Persons trained according to occupational level by population group 119
Table 3.27. Objectives and Success Indicators (target) 121
Table 4.1. Number of Qualification Items in the Technical Group of the NTQS 154
Table 4.2. Number of Qualification Items in the Business Management (Service Group) of the NTQS 155
Table 4.3. Number of Qualification Items in the Other Services Category (Service Group) of the NTQS 156
Table 4.4. NTQS Certification Criteria According to Grade 156
Table 4.5. Certification Criteria for Business Management(Service Group) 157
Table 4.6. Certification Procedures for the Technical Group 160
Table 4.7. The Certification Procedures of the Business Management Field (Service Group) 161

Table 4.8. A Summary of Interview Questions for Professional Engineers 168
Table 4.9. Number of Degrees Awarded by the Credit Bank.. 171
Table 4.10. Interrelations between the ITESS and ITEE 185
Table 4.11. Common knowledge areas covered by different IT qualifications exams 186
Table 4.12. Trends in Employment Levels by NQF Qualifications.............................. 200
Table 4.13. The National Qualifications Framework(NQF) 203
Table 4.14. Types of Qualifications 206
Table 4.15. Fields of Learning 207
Table 4.16. Process for SGB Establishment... 212
Table 4.17. Process for SGB Recognition.. 212
Table 4.18. Summary of Differences between Bands 224
Table 4.19. Conversion of existing Qualifications in the Hospitality, Travel, Gaming and Leisure Sector into the NQF 225
Table 4.20. Conversion of Existing Qualifications in the Banking Sector into the NQF 227
Table 4.21. Number of Registered Engineers in South Africa..................................... 228
Table 4.22. Categories Registered by the Engineering Council of South Africa......... 229
Table 4.23. Qualifications Recognized by the ECSA 230
Table 4.24. Minimum Period of Practical Training after Qualification 230
Table 5.1. Comparison of VET and Qualification System in Korea and South Africa 246

List of Figures

Figure 2.1. Labor force participation rates 13
Figure 2.2. Occupational employment share, by occupational grouping, 1999 18
Figure 2.3. Percentage of the employed in each occupational category, 1999 31
Figure 2.4. Number of people (millions) aged 20 years or more in each educational category, October 1999 37
Figure 2.5. Percentage of those aged 10 years or more with no education by age category, October 1999 38
Figure 2.6. Sectorial Distribution of Total Employment, 1998 and 2003 42
Figure 3.1. School system 50
Figure 3.2. Supply System of Skilled Manpower 66
Figure 3.3. Structure for an NQF 93
Figure 3.4. Percentage of those aged 6-25 years who were attending school in October 1999, in single-year age categories 99
Figure 3.5. Highest level of education by age among children aged 7-16 years, October 1999. 100
Figure 3.6. Type of educational institution, if any, that those aged 17-30 years are attending, in single year age categories, October 1999 101
Figure 3.7. Number of people attending educational institutions other than schools, either part-time or full-time, October 1999 105
Figure 3.8. Number of people attending educational institutions other than schools by sex, October 1999 106
Figure 3.9. Field of study among those who had formal post-school qualifications, October 1999 107
Figure 4.1. Qualification System in Korea 131

Figure 4.2. Classification of National Technical Qualifications 153
Figure 4.3. Eligibility for National Technical Qualification 159
Figure 4.4. The Operating System of the NTQS 162
Figure 4.5. Implementation Flowchart of Certification 164
Figure 4.6. Flowchart of the Exam Formulation Procedure
Questions from the NTQS Item Bank 166
Figure 4.7. Structure of the Japanese IT Qualifications System and
the Role of Engineers 185
Figure 4.8. Organizational Structure under SDA 197
Figure 4.9. Learning Progression Path 217
Figure 4.10. Format for Standards 221
Figure 4.11. Process to Get Certification as Registered Certified Engineer
in the Field of Electrical/Mechanical Engineering 233

27

I. INTRODUCTION

1. Background of Study

This technical study is prepared for Korea International Cooperation Agency project (KOICA No.97-3658-110-1), Upgrading of South Africa's National Technical Testing Center. The Executing Agencies for the project are KOICA and the INDLELA (Institute for the National Development of Learnership, Employment, Skills and Labor Assessment)[1] under the Department of Labor, South Africa.

In order to fully understand the role of the project and the background of this study, it is important to state: (i) the rationale for the project (ii) the objectives of the project and (iii) the process involved in executing the project, as it relates to this study.

A. Rationale for the Project

South Africa has one of poorest human resource development records in comparison to other countries at equivalent stages of development. Problems in the schooling and university system have contributed to this poor record, in addition, failure to provide intermediate levels of skills results in low productivity.

Most of the blame for this can be attributed to the systematic exclusion of black South Africans from structured education and training programs and the failure to link education and training to industrial skills demand. Black South Africans have been carefully relegated to the worst areas of this system, namely rote learning in technical colleges and on-the-job training in the lowest occupations with the least skill requirements. In general, the level of enterprise based learning is low by international standards, particularly in sectors with high employment growth potential. The apprenticeship system has been in decline for over a decade and technical college education and training has, on average, produced poor outcomes. These "two systems" are responsible for generating the key mid-level skills for the economy.

There exists a severe lack of coordination for vocational education among education institutions and the lack of standardization are major problems. In addition, training providers of low and intermediate level skills in the country have outdated equipment, curriculum, course materials and trainers, making it difficult for them to respond effectively to industrial skills needs.

---

[1] COTT(Central Organization for Trade Testing) was renamed INDLELA in 1999.

If South Africa is to become a competitive player in the world economy, a new national system of skills development must be established. New incentives, training programs, supporting institutions and personnel must support effective articulation of education and training. It is only through such a system that education and training can be translated into productivity improvements at the enterprise level, into an increasingly flexible workforce able to cope with major structural changes in the economy, and into the skills needed by job seekers, thereby allowing them to find employment or initiate their own income generating activities.

The strong performance of the Korean economy during the last 30 years has been well publicized. Human resource development played a pivotal role in Korea's rapid industrialization process. The government established a vast economic development plan and developed a vocational education and training system in order to supply the manpower necessary to carry out the plan. Thus, the government has successfully restructured the vocational training system to provide the industrial manpower to meet continuously changing industrial demands.

South Africa could learn from the Korean experience. The importance of closer cooperation between Korea and South Africa concerning human resource development has been addressed by recent dialogue between the two countries.

B. Objectives of the Project

The objectives of the project are to assist the South African government in upgrading its National Technical Testing Center and to offer advanced training for its staff. The specific objectives are (i) upgrading of testing equipment in the Central Organization for Trade Testing (COTT), (ii) technical assistance through dispatching Korean specialists to South Africa, (iii) inviting South African officials for advanced training to Korea, and (iv) a joint research on the vocational training and technical qualification systems in Korea and South Africa.

C. Process of the Project

At the Summit of Korea and South Africa held in Seoul in July, 1995, the Presidents of the two countries agreed that Korea would provide support for upgrading of vocational training centers in South Africa.

In August, 1997, the South African government requested the Korean government to change the project from upgrading vocational training centers to upgrading the South Africa's national technical testing center in August, 1997. A team of Korean government officials visited South Africa and signed the Record of Discussion.

The South African delegation was composed of three staff members of the Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (INDLELA) and visited the Republic of Korea from 1 to 12 June, 1998 for the purpose of discussing details of the Project based on the Record of Discussion signed by both parties on the 6th of October 1997. The South African delegation proposed to carry out a joint research on vocational training and the technical qualification systems in Korea and South Africa in project components. The Minutes of the Management Meeting between KOICA and INDLELA was signed on the 11th of June, 1998.

KOICA sent a draft Agreement between the Korean government and the South African government in July, 1998 and received a draft Agreement which was revised by the South African government. The draft Agreement with comments made by the Ministry of Foreign Affairs and Trade, Republic of Korea was sent to South Africa in January, 1999 to be examined by the South African government.

KOICA selected the Human Resources Development Service of Korea(HRD Korea)[2] to conduct the project components of dispatching experts to South African and Inviting South African officials for advanced training in Korea, and the Korea Research Institute for Vocational Education and Training (KRIVET) to conduct the joint research on vocational training and technical qualification systems in the two countries. The agreement between KOICA and KRIVET for the provision of the joint research was signed on the 24th of December, 1998.

---

[2] Korea Manpower Agency (KOMA) was renamed the Human Resources Development Service of Korea (HRD Korea) in 2001.

2. Purpose of the Study

The purpose of the study was to examine the vocational training and technical qualification systems in South Africa. The analysis focused on the relationships among economic policy, education and training system, technical qualification system and labor market. The impact of institutions were explored through international comparison with South Korea.

International comparison of the institutional arrangements in the manpower training systems helped in assessing South Africa's efforts to design its vocational training and technical qualification system to facilitate and support the development industry.

3. Organization and Contents of the Study

This study consists of four parts. The first part examines industrial structure and labor markets in the two countries. It includes economic policy, industrial structure, labor force structure and demands for skilled manpower. The second part of the study examines the provisions of technical and vocational education and training in the two countries. The third part examines the provisions of the technical qualification system in the two countries, as well as the different conditions and status of technical qualification systems, and the need for improving the technical qualification systems. The last part of the study presents summary of the study, policy implications to improve vocational training and the qualification systems and suggestions to upgrade INDLELA.

4. Data and Methodology

The data were collected by means of historical, qualitative and quantitative methods. Historical documents include library materials and reports by various organizations. In order to obtain published government reports, reports by journalists, and existing studies by other scholars, the libraries of research institutes in the two countries were approached for information.

Discussions were held with specialists in the areas of vocational training and the technical qualification systems in two countries. To facilitate these discussions the Ministries of Labor, Education and Human Resources Development training institutes, and private enterprises in Korea were visited. On the South Africa side, Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (INDLELA), Department of Labor, National Statistics Office, Department of Education, National Skills Authority (NSA), South African Qualification Authority (SAQA), Sector Education and Training Authority (SETA), National Training Board, National Economic Development and Labor Council were also approached for information.

On-site observation of skills training and production process were conducted, with the guidance of managers and union officials. For the on-site observation, researchers visited vocational schools, Regional Training Centers and industries.

A. Joint-seminar

A joint seminar was delivered to present the research findings in Pretoria, South Africa on the 21st of February, 2002. Comments from participants of the seminar were incorporated into the implications section of the final report

II. Country Profile and Socio-economic Backgrounds

Korea

1. Country Profile

Located east of the Asian Continent, the Republic of Korea is a democratic state with five thousand years of history. Korea belongs to the north temperate zone; however, its climatic differences in temperature between summer and winter are affected by the continent and seas surrounding the Korean peninsula. Summer lasts from June to August, the monsoonal climate brings 50-60 percent of the annual precipitation of about 1,200mm. Its winter, from December to February is generally cold and dry with occasional heavy snow and northwesterly winds. In between these extremes, the spring is mild and the autumn is cool and serene with clear, balmy skies.

The Korean peninsula shares a border with China and Russia in the north across the Amnokkang and Tumangang Rivers. It faces Japan to the east separated by the East Sea and China to the west separated by the Yellow Sea. Approximately 70 percent of the peninsula is mountainous, particularly in the north and along the eastern coast of the Peninsula. The Korean peninsula as a whole has a total landmass of about 220 thousands square kilometers (85,000 square miles), which is a little smaller than Great Britain. The peninsula is divided into the Republic of Korea in the South and North Korea in the north by the demilitarized zone at roughly 38° parallel Latitude north of equator. The Republic of Korea covers 45 percent of the Korean peninsular with a total land area of about 99 thousands square kilometers.

According to the written history of Korea, the earliest state was founded by Tangun, the mythical progenitor of the Korean people. This tribal state, called Ancient Chosun, was terminated around 100 B.C. with the advent of the "Three Kingdoms." The Three Kingdoms were followed by Unified Shilla in the south in the 7th century and Parhae which succeeded Koguryo in the north. Thus, Korea entered a brief period of "Two Kingdoms" which ended with the fall of Parhae. In the 10th century, the Koryo Dynasty reigned on the Korean peninsula, followed by the Chosun Dynasty in the 14th century, which continued up to the Republic of Korea, inaugurated in 1948 after 35 years of interruption by Japanese colonial rule.

Korea is a constitutional republic. The executive, the legislative, and the judiciary constitute the three branches of government under the President. The legislature is unicameral and the judiciary is composed of the lower court, the court of appeal and the Supreme Court. The nation is divided into 16 administrative units, which are seven metropolitan cities and nine provinces.

Ethnically, Koreans belongs to the Mongolian race and they are a homogeneous race speaking one language. In addition, they possess their own culture and customs which differ from those of their nearest neighbors, China and Japan. They also have their own unique Korean phonetic alphabet, the Han-Gul, which is regarded as one of the most original and yet the most scientific of the various phonetic writing systems.

The Republic of Korea has an estimated population of 46.1 million with an annual decrease rate of 1.5 percent in 2000. About 74.8% of the total population lives in urban area. The population density is one of the highest, accommodating 471 persons per square kilo meter.

Approximately 53.6% of Korean adhered to one type of religion or another, Buddhists forming the largest group with 49.0%, Christians representing 47.7% (Protestant: 34.7%, Catholic: 13.0%) and Confucians representing 1.2% (National Statistical Office, Social Indicators in Korea, 2000).

2. The economic and labor market contexts

Over the past three decades, the Korean economy developed at a remarkably fast rate and the country came to be known as one of the Asian 'four tigers'. This high-growth period was characterized by substantial increases in investment in physical and human capital.

Korea began in the early 1960s as a typical labor-surplus economy with a scarce endowment of natural resources and a small domestic market. The government established economic growth as its primary goal and began to mobilize the nation's resources toward this end. During the initial stage of export promotion in the 1960s, unskilled and semi-skilled workers were rapidly mobilized into labor-intensive

manufacturing industries such as textiles, footwear and garments. Using its abundant supply of labor, Korea achieved an extremely rapid economic expansion.
During the 1970s, the Korean government began to undertake a fundamental structural change towards the development of heavy- chemical industries. The government used commercial loans through the nationalized banks to reward companies conforming to state policies. After the early 1970s these 'policy loans' incentives were provided to firms to invest in state-targeted heavy manufacturing industries. In response to such growth-minded policies, these firms expanded their economic activities, most of them following strategies based heavily on low product costs.

By the 1990s, a shift towards more technologically advanced products was underway, and high-technology and service industries were able to compete successfully with industries of more developed economies.

From 1970 to 2000, the labor force in Korea more than doubled from 10 million to 22 million. The labor force participation rate increased from 47.6 per cent to 60.7 per cent during the same period (table 2.1).

Over the past 30 years, Korea's economic growth has been spectacular. From 1970 to 2000, the gross domestic product (GDP) rose at an annual rate of nearly 8 per cent from a per capita income level of US$ 650 in 1970 to US$ 9,675 in 2000. This growth resulted in a 15-fold increase in per capita GDP in the last three decades.

Table 2.1: Background statistics

	1970	1980	1990	1997	1998	1999	2000
Population (thousands)	32,241	38,124	42,869	45,991	46,430	46,858	46,136
GDP per capita(US$)[a]	650	2,324	7,751	10,363	6,843	8,660	9,675
Unemployment rate	4.4	5.2	2.4	2.6	6.8	6.3	4.1
Labor force(thousands)	10,062	14,431	18,539	21,604	21,390	21,369	21,950
Labor force Participation rate [b]	47.6	59.0	60.0	62.2	60.7	60.5	60.7

a)Using current purchasing power parities, at current prices.

b) Population aged 15 and over

Sources: National Statistical Office, Population Projections for Population estimates; Annual report on the Economically active population survey, various issues.

The industrial structure of the economy

The share in GDP by industrial origin shows a significant decrease in agriculture, forestry and fisheries. The agricultural sector accounted for 0.7 percent in 1999, having decreased from 29.7 percent in 1970. The share of manufacturing rose to 31.3 percent from 18.1 percent during the period of 1970-1999. The share of the service sector (including finance, insurance, real estate and business service) has risen from 50.6 percent to 67.8 percent during the same period (table 2.2).

Table 2.2: Share of GDP by industrial origin, 1970–99.

	1970	1980	1990	1995	1998	1999
Total	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture & fisheries	29.7	14.7	8.5	6.2	4.9	0.7
Mining & manufacturing	19.7	29.7	29.6	29.9	31.1	31.5
(manufacturing)	18.1	28.2	28.8	29.4	30.7	31.3
Service and others	50.6	55.6	61.9	63.9	64.0	67.8

Source: National Statistical Office, Economic statistics yearbook, 1971,1981, 1991, 1996, 1999, 2000.

Changes in the manner of employment

The rapid advancement of new technologies and the globalization of trade and labor markets are having a significant impact on the nature of work, the way it is organized and the skills it requires. These changes comprise the growth of the service sector, including a shift to casual or part-time work; occupational change and the emergence of new occupations. During the rapid industrialization in the last three decades, the proportion of high-skilled workers increased, while the proportion of unskilled workers declined.

The service sector now absorbs the largest proportion of the labor force. In 2000 about 68.9 per cent of the labor force was employed in services. The share of agriculture, forestry and fisheries continued to decrease from 50.5 per cent in 1970 to 10.8 per cent in 2000. The manufacturing sector contributed 20.1 per cent of the total employment in the country.

Table 2. 3: Labor force by industry

Unit: 000 persons, per cent

	1970	1980	1990	1995	1998	2000
Employed persons	10,062	14,431	18,539	20,797	14,684	21,061
	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture, forestry & fishing	50.5	34.0	17.9	12.5	12.2	10.8
Mining & manufacturing	14.3	22.5	27.6	23.5	19.6	20.2
(manufacturing)	13.2	21.6	27.2	23.4	19.5	20.1
Service and others	35.2	43.5	54.5	64.0	68.2	68.9

Source: National Statistical Office, Economic statistics yearbook, 1971, 1981, 1991, 1996, 1999, 2001

A majority of Koreans are employed in small and medium-sized firms.[3] In 1999, about 81.9 per cent of the total labor force was employed in small and medium- sized firms, with 61.7 per cent in small-sized firms and 20.1 per cent in medium-sized firms. There were 2.77 million small and medium-sized firms representing 99.7 per cent of Korean businesses and employing 8.87 million persons.

A large proportion of Koreans are employed in 'non-regular' jobs of short duration. In 2000, more than half of all employees had either a temporary or a daily contract, and the proportion of employees with a 'regular' contract was therefore less than half. The proportion of employees in 'non-regular' jobs has continued to grow in the last two decades (table 2.4).

A detailed analysis of employment by status suggests a degree of labor market duality by gender, age and education level, with younger and higher-educated men performing most regular jobs. The incidence of non-regular work is high among women, older workers and the lower-educated. Among OECD countries in 2000, Korea had the lowest number of workers holding a permanent job, followed by Turkey. In 2000, 30 per cent of Korean workers had a regular job, less than half the figure of those in regular employment in most other OECD countries.

---

[3] In Korea, the definition of small and medium -sized firms varies depending on industry. It is defined as firms with less than 299 employees in manufacturing industry and information management related industry, firms with less than 199 employees in fisheries, hotel and broadcasting industry, firms with less than 99 employees in tourism, electronic business, wholesale of medical products industry, and firms with less than 49 employees in agriculture, forestry, retail of food and beverage.

Table 2.4: Distribution of the employed by worker status

Unit: %

	Total Employed Persons	Unpaid workers		Wage & salary workers		
		Self-employed	Non-paid family workers	Regular employees	Temporary Employees	Daily workers
1980	100.0	33.9	18.8	30.4	7.4	9.5
1985	100.0	31.2	14.3	34.0	10.9	9.3
1990	100.0	28.0	11.4	32.8	17.5	10.2
1991	100.0	28.0	10.9	33.7	17.5	9.8
1992	100.0	28.5	10.5	34.8	16.9	9.3
1993	100.0	28.2	10.8	35.8	16.2	8.9
1994	100.0	27.8	10.2	35.8	17.2	8.9
1995	100.0	27.9	9.6	36.4	17.4	8.9
1996	100.0	27,9	9.3	35.6	18.5	8.7
1997	100.0	28,3	9.0	33.9	19.8	9.0
1998	100.0	28.9	10.1	32.3	20.0	8.7
1999	100.0	28.8	9.5	29.8	20.6	11.3
2000	100.0	28.5	9.1	29.7	21.4	11.3

Source: National Statistical Office 2000, Annual report on the economically active population survey, various years

Overview of the labor market for adults

The pattern of labor force participation differs with age and gender. After 30 years of age male labor force participation declines gradually with age, with only half of the 60–64-age-group still in the labor force in 1999.

With the exception of men aged 60 to 64 years of age, there has been a decline in labor force participation for men in all age groups since 1990.

The situation for women is different. In sharp contrast to men, labor market participation for women in the 25–49-age-groups, and 60–64-age-group increased during the 1990s. Women's labor force participation in 1999 reached a peak of 63.0 per cent in the 40–49-age-group, followed by 60.8 per cent in the 20–24-age-group. The women's labor force participation rate is 'M' -shaped.

Since 1990, there has been an increase in the proportion of the labor force aged over 40.

Figure 2.1: Labor force participation rates

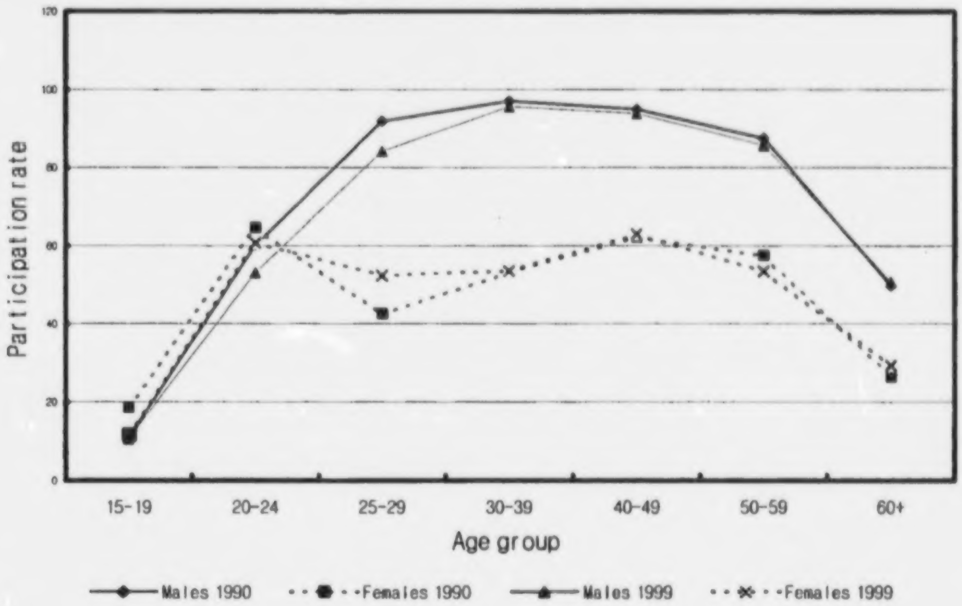


Table 2.5: Employment trend, by age (%)

	1990			2001		
	Total	**Male**	**Female**	**Total**	**Male**	**Female**
Total	100.0	100.0	100.0	100.0	100.0	100.0
15–19	3.2	2.1	4.8	1.9	1.5	2.4
20–24	10.4	6.4	16.2	7.6	4.6	11.9
25–29	14.0	16.1	11.2	11.9	12.3	11.4
30–39	27.9	30.7	23.8	26.6	29.1	23.1
40–49	21.6	22.3	20.7	26.9	27.3	26.3
50–59	15.7	15.9	15.4	14.7	15.5	13.7
60+	7.2	6.5	7.9	10.4	9.8	11.2

Source: National Statistical Office 2002. Annual report on the economically active population survey.

Table 2.6: Age profile of the Korean workforce Aged 15 to over 55 by industry sector, 1998 (per cent)

Industry sector	**Age in years**					
	15–19	**20–24**	**25–34**	**35–44**	**45–54**	**55 +**
Agriculture & Fishing	0.3	1.2	5.5	15.7	20.5	56.8
Mining	-	5.0	10.0	40.0	35.0	10.0
Manufacturing	1.7	7.7	32.0	35.2	16.0	7.4
Electricity, gas & water supply	-	6.6		34.4	21.3	8.2
Construction	0.8	5.7	30.3	33.6	19.8	9.8
Wholesale & retail trade	2.4	0.9	31.9	33.9	18.7	12.2
Restaurants & hotels	4.7	8.7	24.3	24.9	26.2	11.2
Transport & Communication	0.6	4.8	25.8	35.2	23.4	10.2
Finance & insurance	1.4	10.1	31.2	21.4	14.7	20.9
Real estate & business services	1.3	10.5	31.2	21.4	14.7	20.9
Other community services	1.7	10.5	29.5	28.0	17.4	12.9
All industries	1.8	7.4	26.5	30.0	18.0	16.3

Source: National Statistical Office 1999, Economically active population.

Unemployment

With its high economic performance, Korea has succeeded in absorbing the massive new labor force which entered the market. Korea has experienced very low unemployment rates in spite of its rapid economic growth.

Table 2.7: Unemployment rates by age and gender (%)

	1990		2001	
	Males	**Females**	**Male**	**Female**
Total	2.9	1.8	4.2	3.0
15–19	10.2	8.7	14.7	12.4
20–24	9.2	4.5	11.5	7.4
25–29	4.9	1.9	7.1	3.9
30–34	2.2	1.0	3.6	2.4
35–39	1.7	0.8	3.3	2.2
40–44	1.8	0.6	3.3	2.4
45–49	1.4	0.4	3.2	1.8
50–54	1.7	0.3	3.3	2.1
55–59	1.4	0.2	3.3	1.1
60-64	0.6(60+)	0.2(60+)	2.8	0.8
65+			0.6	0.2

Source: Ministry of Labor 1991, 2002. Yearbook of labor statistics.

The financial crisis which started at the end of 1997 brought the growth process to a sudden, unexpected halt. The crisis forced the government to agree to a rescue package with the International Monetary Fund (IMF). The unemployment rate rocketed from 2.5 per cent to a peak of 8.5 per cent in early 1999, and more than one million Koreans were thrown into poverty. The difficult economic and social situation forced the authorities to implement quickly a wide range of macroeconomic and structural reforms, notably in the areas of labor market policies and social safety nets. In response to these reforms, the economy has now turned the corner, permitting the unemployment rate to fall rapidly to about 4.8 percent, while short-term prospects point to a continuation of the economic recovery.

Although unemployment rates in 2001 are falling, it is unlikely that they will return to the 2 per cent rate recorded in the mid-nineties. Although unemployment rates in the order of 4 to 5 per cent, such as those recorded in early 2002, are low by OECD standards, singling out the groups more at risk of unemployment, and especially of long-term unemployment, is important for the purpose of economic policy.

3. Current skill levels

Education profile of the adult workforce

The previous section highlight some key aspects concerning the demand side for labor in Korea and its implication for skill formation. Skill formation policies also need to be shaped by reference to the 'supply side'.

The quality of labor supply is indicated by examining the level of skills held by those in the labor force. The levels of education attainment of the labor force are shown in table 2.8.

Skill formation, as indicated by levels of education and attainment, has improved in Korea over the past three decades. The proportion of the labor force which had completed college education rose from 6.7 per cent to 24.0 per cent between 1980 and 2000. The senior secondary schooling completion rate for the same period almost doubled, rising from 21.8 per cent to 43.2 per cent.

This high educational level of the labor force supports the claim that a trained workforce, together with a more professional workforce, contributes to improving productivity and enhances the industrial structure in Korea.

Table 2.8: Labor force by educational attainment (%)

	1980	1985	1990	1995	1999	2000
Primary school Graduates & under	51.3	37.7	29.1	21.4	18.5	18.0
Middle school graduates	20.2	21.1	19.5	16.3	14.3	14.8
High School Graduates	21.8	30.9	37.7	43.2	43.0	43.2
College, university Graduates & over	6.7	10.3	13.7	19.1	23.7	24.0

Source: National Statistical Office (2001), Population & housing census

Changes in occupational mix and skill intensity

The structural changes in the Korean economy have been accompanied by changes in the profile of the workforce. The percentage of professionals and associate professionals has risen while skilled and unskilled production workers has been in decline during 1993–1999. Sales and service workers and agricultural skilled workers have also been in decline during the same period (table 2.9).

It is projected that this trend will continue over the next decades; the percentage of professionals and associate professionals will continue to rise while agricultural skilled workers and unskilled production workers will continue to decline (Jang et al. 1998).

Table 2.9: Changes in occupation, 1993–99

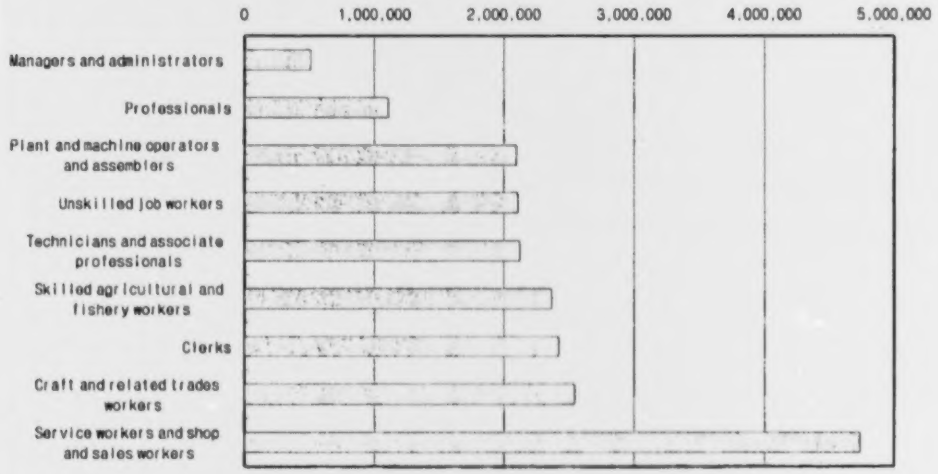
Unit: persons, per cent

	1993	1994	1995	1996	1997	1998	1999
Total (persons)	19,328	19,905	20,432	20,817	21,106	19,994	20,281
	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mangers & Administrators	2.7	2.7	2.6	2.6	2.5	2.6	2.4
Professionals	4.6	4.1	4.8	4.9	4.7	5.5	5.2

Associate professionals	7.7	8.6	9.0	9.5	10.3	10.6	11.5
Clerical workers	12.5	12.2	12.3	12.3	12.2	12.1	10.9
Sales and service workers	20.9	21.6	21.9	22.5	23.0	23.7	23.8
Agriculture skilled workers	13.2	13.0	11.7	11.1	10.8	11.8	10.9
Skilled production worker	14.6	13.7	15.8	15.5	15.0	12.7	12.8
Machine operators	12.8	12.9	10.7	10.5	10.3	10.5	10.4
Laborers and related workers	11.0	11.2	11.2	11.1	11.2	10.5	12.1

Source: National Statistical Office 1999, Economically active population CD.

Figure 2.2: Occupational employment share, by occupational grouping, 1999



4. The impact of demographic change

The other factor which is important in gauging the nation's skill development needs is the likely change in the demographic structure of the population and the possible impact

BEST COPY AVAILABLE

such change will have on skill development.

The workforce of Korea is aging. In 1990, 54 per cent of the population was aged 25 and over. By 2000 the percentage in this group had increased to 63.8 per cent (table 2.10). Population projections indicate that by 2010 the percentage will have risen to 67 per cent. By 2020 more than 69 per cent of the population are likely to be over 25 years of age.[4]

Table 2.10: Population profile of people, by gender

Unit: %

Age	1990			2000		
	Males	Females	Persons	Males	Females	Persons
15–	26.5	24.7	25.7	23.0	20.0	21.5
15–19	10.4	10.1	10.2	8.0	7.5	7.7
20–24	10.6	9.7	10.1	6.2	7.7	7.0
25–29	9.9	10.0	10.0	8.9	8.9	8.9
30–34	9.8	9.6	9.7	9.2	8.9	9.1
35–39	7.6	7.2	7.4	9.5	9.1	9.3
40–44	6.0	5.7	5.8	9.1	8.6	8.9
45–49	5.1	5.0	5.0	6.7	6.4	6.6
50–54	4.6	4.7	4.6	5.3	5.1	5.2
55–59	3.5	4.0	3.7	4.3	4.4	4.4
60–64	2.3	3.1	2.7	3.8	4.2	4.0
65–69	1.7	2.4	2.1	2.7	3.4	3.1
70–74	1.1	1.7	1.4	1.6	2.5	2.0
75–79	0.6	1.1	0.9	1.0	1.7	1.3
80+	0.3	1.0	0.7	0.6	1.5	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number (000's)	21,770.9	21,619.5	43,390.4	22,021.8	22,689.7	44,711.6

Source: National Statistics Office (2002). Korea statistical yearbook, Population by single year of age and sex 1992, 2002.

---

[4] The National Statistical Office (1996). *Estimation of Future Population.*

South Africa

1. Country Profile

South Africa is a large, scenically splendid and humanly diverse country at the foot of the African continent. Its physical size (1,219,090km^2) makes it bigger than Germany, France, Italy, Belgium and Holland put together, or Texas and California combined. Cape Town at 35 degree south latitude is as far from the equator as Sydney, Australia, or Los Angeles in the Northern Hemisphere. Most South Africans live in the eastern regions of the country, where the higher rainfall, better soil and rich minerals offer more job opportunities.

South Africa has three capitals: Pretoria is the administrative, Cape Town the legislative and Bloemfontein the judicial capital. Parliament sits in Cape Town.

Thanks to the wide expanses of ocean around it, South Africa enjoys a generally temperate climate, though weather patterns and rainfall statistics vary widely. Summers are generally warm to hot; winters dry and sunny, interspersed with occasional spells of intense cold and heavy frosts in the interior and snowfalls on the highest mountains.

South Africa is a constitutional republic. The executive, the legislative, and the judiciary constitute the three branches of government under the President. The legislature is unicameral and the judiciary is composed of the lower court, the court of appeal and the Supreme Court. Within the Republic of South Africa (RSA) there were separate administrations for the four provinces of the 'common area' (Transvaal, Cape Province, Orange Free State and Natal) and the five 'self-governing territories (KwaZulu, Lebowa, Gazankulu, KaNgwane, KwaNdebele and QwaQwa).

South Africa has an estimated population of 43.3 million in October 1999. It had increased to this number from 40.6 million in October 1996, the time of the first population census after democracy was achieved in the country in April 1994. As many as 77.8 per cent of the population was estimated to be African, with 10.5 per cent being white, 8.9 per cent coloured and 2.6 per cent Indian. The classification into four groups, based on the old apartheid regime, is still used here.

The age distribution of the South African population resembles the structure of a developing rather than a developed country. There are proportionately more young than older people.

The country has eleven official languages. The most frequently spoken official first home language in South Africa in 1999 was isiZulu (spoken by 23.5% of South African), followed by isiXhosa (17.6%) and then Afrikaans (13.7%). The least frequently spoken official home languages were Tshivenda (2.8%), siSwati (2.5%) and isiNdebele (1.5%). Since October 1995, there has been a slight increase in the proportion of people speaking indigenous African language as their home language, and a slight decrease in the proportion of those speaking both English and Africans.

In October 1999, 53.9 % of the population was estimated to be living in urban and 46.1% in non-urban areas. These percentages varied considerably by province. For example, at the one extreme, 96.5% of Gauteng and 88.9% of Western Cape residents lived in urban areas. At the other extreme, 11.6% Northern Province and 33.2% of Eastern Cape residents lived in urban areas.

The non-urban population in South Africa is overwhelmingly African. The pattern of movement into urban and non-urban areas at different life stages affects mainly Africans. Both the young and the elderly Africans tend to live in non-urban areas, while those of working age tend to live in urban areas. The pattern is more marked for African men than it is for African women.

South Africa is a Christian country, though not exclusively. Approximately, three-quarters of all South African now claim to be members of a Christian church, either of a world-wide denomination or of one of those many which have been created in South Africa itself.

South Africa had been colonized by Dutch, followed by British since the 17th century. On 31 May 1910 the Union of South Africa, a self-governing dominion within the British Empire, came into being. The majority black population was virtually excluded from the negotiations leading to Union and deprived of more land.

During the years between Union and the post WWII election of 1948 South Africa transformed itself into a industrial nation – began to give legal effect to the segregation of black and white races that had always been inherent in society. Black formed the African National Congress (ANC) as early as 1912. Afrikaners came together in the National Party (NP), following its victory at the polls in 1948 and devised a much more rigid system of territorial, social and political segregation known as *apartheid*, which met with growing black resistance and hostility.

The ANC formed an armed wing and embarked on a campaign of limited sabotage and later terror campaign. The state embarked on even tougher measures to put down black resistance.

With the liberation of neighboring countries by the beginning of the 1990s, ANC and SA Communist party were unbanned and entered into negotiations over a new political dispensation for the country. After lengthy negotiations involving a wide range of political parties, an interim constitution was agreed upon and in April 1994 South Africa went to the polls as a united nation with universal franchise for the first time. The ANC won the election by a wide margin and Nelson Mandela became the country's first black president on 10 May 1994.

Immediately afterwards, economic and other sanctions were lifted and South Africa reclaimed its seat in the UN General Assembly, became a member of the Organization of African Unity and rejoined the Commonwealth.

2. The economic and labor market contexts

Owing to the country's rich endowment with agricultural and mineral resources, South Africa's economy was driven by the agricultural and mining sectors prior to the 1940's. As the world had great interest in the exploitation of the country's agriculture and miners, the country attracted foreign capital. The country's minerals, particularly gold, earned valuable foreign exchange.

Economic performance began to decline during the 1970s as the economy went through a prolonged crisis that spanned decades, attested to by the decline in growth rates from about 5.5% in the 1960s to 3.3% in the 1970s and 1.2% in the 1980s. From 1989, the economy experienced negative growth for a period of about five years.

Beginning in the 1960s, South Africa faced threats of economic and trade sanctions

48

which led to an industrial policy that was inward focused. The government led the establishment of para statals in key sectors such as electricity and gas, telecommuni -cations and steel. The advantage of this approach has been the creation of a strongly diversified economy, particularly a strong manufacturing sector. The sanctions had a severely negative impact on the economy. Foreign companies withdrew, taking along much needed capital and imports began to outstrip exports. The Rand (South African dollar) began its slide against the dollar in 1982, and has not recovered since.

The deterioration of economic performance accelerated during the 1980s due to the poor economic environment. Conflict arose between business and labor, and between the state and the disenfranchised majority. The country became unsuitable for business. What followed was a rapid decline in GDP per capita as the population growth rate outstripped GDP growth, arise in unemployment and inflation, and increased inequality between blacks and whites in terms of income, employment, education access, etc.

The 1990s witnessed the democratization of the state, and the reintegration of the South African economy into the global one began. This led to a change in industrial policy from one which was inward focused to one which is outward oriented. There's now a shift towards high-technology, while the services sector is growing at a tremendous rate.

The population has more than doubled since 1970, and the labor force participation rate is just over 50%. Although GDP per capita has increased tremendously, it hides huge inequalities in terms of race, gender and geographical locations.

Table 2.11: Background statistics[5]

	1970	1980	1990	1997	1998	1999
Population (thousands)	19,211	23,994	30,575	41,230	42,130	43,050
GDP per capita US$[6]	929	3,357	3,663	3,331	6,800	6,900
Unemployment rate	7,04	6,64	na	25,1	25,2	23,3
Labor force (thousand)	8,114	8,689	na	11,698	12,553	13,527
Labor force participation rate	na	na	na	44,4	48,8	51,5

Source: South Africa-Statistical Yearbook

---

[5] The population figures prior to 1994 exclude the former "independent states of TBVC" whose population was estimated at 6,751 million.

[6] Current purchasing parities, at current prices

The industrial structure of the economy

Prior to the end of WWII, the South African economy was dominated by mining and agriculture. This dominance began to wane by the 1960s as the primary sector's contribution to GDP began to drop from 25.1 per cent in 1960, to 17.0 per cent in 1970 and 13.3 per cent in 1993. This figure rose sharply to 27.9 per cent in 1980. The secondary sector began its dominance over the primary sector in 1960. From 26.6 per cent in 1960, it rose to 30.8 per cent in 1970, 28.9 per cent in 1980 and 30.7 per cent in 1993. The biggest contribution in the secondary sector is attributable to manufacturing.

The diversification of the South African economy is reflected by the dominance of the tertiary sector from 1960 with a 48.3 per cent contribution to GDP. In 1970 the figure stood at 52.3 per cent, rising to 43.2 per cent in 1980 and 56.0 per cent in 1993. During the period of 1960-1990, the country's industrialization policy focused on inward industrialization-a measure aimed at counter-acting economic sanctions.

Table 2.12: GDP Share by industry

Industry	1970	1980	1990	1995	1998
Primary Sector	17.0	27.9	12.3	10.82	10.67
Agriculture and fishing	7.9	6.8	4.96	3.86	4.19
Mining and quarrying	9.1	21.1	7.34	6.96	6.48
Secondary Sector	30.7	28.9	28.87	27.85	26.88
Manufacturing	23.9	22.5	22.0	21.2	20.17
Electricity, gas and water	2.6	3.1	3.17	3.48	3.59
Construction	4.2	3.3	3.70	3.15	3.12
Services Sector	52.3	43.2	58.83	61.33	62.45
Wholesale and Retail trade	15.1	12.2	14.31	14.34	13.70
Transport and Communication	9.8	8.8	7.87	8.90	10.12
Finance, Real Estate , Business	14.7	11.1	15.59	16.42	17.96
Community and Social Services	19.0	14.0	2.27	2.73	2.58
General Government Services	9.3	9.1	15.97	16.15	15.33
Other			2.79	2.78	2.76

Source: Statistics South Africa-Statistical Yearbook 2000

It is clear from the above table (table 2.12) that the manufacturing industry is still the most dominant single industry in the South African economy, but also evident is the emergence of the services sector as the most dominant, particularly the wholesale and retail, finance and business services sectors and also general government.

Employment trends

As the economy's industrial structure changes so does the patterns of employment. The importance of the primary industries have diminished drastically over the past thirty years. South Africa's employment patterns reflect three broad trends. Firstly there is the consistent decline in employment in the agriculture and mining industries at least over three decades. Secondly, a significant rise in the employment share by manufacturing until the 1970s and then gradual decline since the 1980s. Manufacturing industry is still the countries number one employer. The job losses may be due to change in production technologies and processes. Thirdly, a gradual increase in employment in the services sector since the 1980s.

Table 2.13: Labor force by industry (%)

Industry	1970	1980	1990	1995	1998
Total employment				7,666	7,423
Primary Sector				18.91	16.91
Agriculture and fishing				11.13	11.08
Mining and quarrying				7.78	5.83
Secondary Sector				29.09	22.95
Manufacturing				18.54	18.20
Electricity, gas and water				0.93	0.93
Construction				4.62	3.82
Services Sector[7]				57.0	60.07
Wholesale and Retail trade				12.26	13.22
Transport and Communication				4.54	4.32
Finance, Real Estate , Business				7.12	7.91
Community and Social Services				33.08	34.62

Source: Bhorat, 2000 (WEFA IAS);:Statistics South Africa-Statistical Yearbook 2000.

An important observation is the fact that the employment share of the community and social services sub-sector has significantly increased over the three decades (see table

---

[7] Excludes General Government Services

2.13), whereas GDP share has been shrinking over the same period. There could be many explanations for this, amongst which may be the fact that most of these activities are unrecorded, and when they are it's still difficult to attach a monetary value.

Table 2.14 shows that as the structure of the economy was changing, there was also an increase in the employment of skilled and highly skilled workers. This is deduced from the acute increases in employment in the skilled or high skill occupational groups. As an example, the employment of professionals increased by more than 300 per cent between 1970 and 1995, whereas that of farm workers decreased by more than 50 per cent and production workers and artisans decreased by 4.4 per cent during the same period.

Table 2.14: Formal Employment Trends By Sector and Occupation: 1970-1995

Occup.	Agric.	Mining	Manuf.	Utilities	Cnstrn	Wholes	Trspt	Finance	Comm	Total
Prof/Semi-P/Tech	1,450	7,806	34,014	2,384	9,615	13,077	11,091	25,408	251,557	356,402
95	3,631	21,791	105,672	16,255	22,289	62,891	66,626	184,918	983,988	1,468,061
%	150.4	179.2	210.7	581.8	131.8	380.9	500.7	627.8	291.2	311.9
Adm/Exec/Mnger	910	2,380	29,145	267	11,155	40,547	6,996	11,493	12,165	115,058
95	6,672	13,125	82,567	2,506	22,274	162,562	31,982	54,037	52,243	427,968
%	633.2	451.5	183.3	838.6	99.7	300.9	357.1	370.2	329.5	272.0
Clr & Sales	3,330	17,593	119,226	3,507	15,148	318,230	49,915	110,006	95,680	732,635
95	12,709	37,953	130,009	10,368	15,858	276,252	61,316	221,146	297,206	1,062,817
%	281.7	115.7	9.0	195.6	4.7	-13.2	22.8	101.0	210.6	45.1
Service	4,919	25,448	31,721	2,646	6,985	94,736	16,886	26,609	1,033,398	1,243,348
95	17,809	37,076	79,610	7,246	6,952	595,741	41,831	105,612	738,796	1,630,673
%	262.0	45.7	151.0	173.8	-0.5	528.8	147.7	296.9	-28.5	31.2
Farm/Fish/For	2,443,353	4,525	5,198	456	1,086	2,733	864	390	63,866	2,522,471
95	1,019,352	3,538	8,521	0	469	11,615	2,871	1,629	107,790	1,155,785
% ch	-58.3	-21.8	63.9	-100.0	-56.8	325.0	232.3	317.7	68.8	-54.2
Prd wrk & oper/Art	13,163	585,365	585,470	18,096	265,197	102,933	68,887	3,415	37,268	1,679,794
95	21,657	229,466	690,781	39,279	255,473	196,518	57,980	20,680	93,359	1,605,193
% ch	64.5	-60.8	18.0	117.1	-3.7	90.9	-15.8	505.6	150.5	-4.4
Laborer	8,331	14,101	166,007	17,935	150,640	71,959	78,949	3,879	76,083	587,884
95	19,448	70,498	233,245	8,888	82,980	118,860	26,809	7,970	69,302	638,000
% ch	133.4	400.0	40.5	-50.4	-44.9	65.2	-66.0	105.5	-8.9	8.5
Transport	6,293	22,159	47,493	1,226	14,297	61,601	102,353	8,322	22,645	286,389

95	137,159	52,469	119,386	8,072	21,334	93,466	184,082	30,091	134,312	780,371
% ch	2079.5	136.8	151.4	558.4	49.2	51.7	79.9	261.6	493.1	172.5
Unspec	211	974	7,677	241	1,379	2,019	2,283	409	2,944	18,137
95	407	3,395	6,510	1,466	1,197	4,942	2,881	2,215	79,673	102,686
% ch	92.9	248.6	-15.2	508.3	-13.2	144.8	26.2	441.6	2606.3	466.2
Total	2,481,960	680,351	1,025,951	46,758	475,502	707,835	338,224	189,931	1,595,606	7,542,118
95	1,238,844	469,311	1,456,301	94,080	428,826	1,522,847	476,378	628,298	2,556,669	8,871,554
% ch	-50.1	-31.0	41.9	101.2	-9.8	115.1	40.8	230.8	60.2	17.6

Source: Bhorat 2000

Although statistically not well-captured, the trends are that employment in SMMEs is increasing, as the big businesses continue to shed jobs amidst continuous restructuring of the economy. In 1998, 1.3 million workers were employed in the informal sector, equivalent to 13.8 per cent of total employment in that year (Statistics SA: Employment and Unemployment in SA 2001).

Table 2.15A Workforce Profile (All Companies) (%)

	Male	Female	Total
Executive Directors and Senior Managers	87.3	12.63	100
Junior – Middle Management	73.1	26.86	100
Professionals	70.0	29.99	100
Technicians and Associate Professionals	72.2	27.75	100
Clerical & Administrative workers	45.8	54.18	100
Service and Sales Workers	48.2	51.74	100
Skilled Agricultural and Fishery Workers	43.7	56.30	100
Craft and Related Trades	94.5	5.48	100
Operators and Assemblers	82.5	17.49	100
Laborers and Related Workers	79.2	20.71	100
Total Permanent Employees	77.1	22.83	100
Temporary and Casual Employees	59.4	40.57	100
Grand Total	69.4	30.54	100

Table 2.15B Workforce Profile (0-49 Employees) (%)

	Male	Female	Total
Executive Directors and Senior Managers	74.2	25.73	100
Junior – Middle Management	66.3	33.66	100
Professionals	41.6	58.33	100
Technicians and Associate Professionals	82.4	17.54	100
Clerical & Administrative workers	26.9	73.08	100
Service and Sales Workers	61.5	38.42	100
Skilled Agricultural and Fishery Workers	81.3	18.67	100
Craft and Related Trades	94.5	5.46	100
Operators and Assemblers	89.0	10.98	100
Laborers and Related Workers	62.8	37.11	100
Total Permanent Employees	64.7	35.30	100
Temporary and Casual Employees	63.3	36.64	100
Grand Total	67.4	32.58	100

Table 2.15C Workforce Profile (50 - 149 Employees) (%)

	Male	Female	Total
Executive Directors and Senior Managers	86.1	13.88	100
Junior – Middle Management	75.5	24.46	100
Professionals	63.8	36.19	100
Technicians and Associate Professionals	50.5	49.42	100
Clerical & Administrative workers	36.2	63.76	100
Service and Sales Workers	61.4	38.57	100
Skilled Agricultural and Fishery Workers	68.1	31.89	100
Craft and Related Trades	86.2	13.76	100
Operators and Assemblers	80.5	19.50	100
Laborers and Related Workers	71.6	28.35	100
Total Permanent Employees	61.2	38.71	100
Temporary and Casual Employees	61.1	38.88	100
Grand Total	66.8	33.11	100

Table 2.15D Workforce Profile (150 - 499 Employees) (%)

	Male	Female	Total
Executive Directors and Senior Managers	86.1	13.88	100
Junior – Middle Management	75.5	24.46	100
Professionals	63.8	36.19	100
Technicians and Associate Professionals	50.5	49.42	100
Clerical & Administrative workers	36.2	63.76	100
Service and Sales Workers	61.4	38.57	100
Skilled Agricultural and Fishery Workers	68.1	31.89	100
Craft and Related Trades	86.2	13.76	100
Operators and Assemblers	80.5	19.50	100
Laborers and Related Workers	71.6	28.35	100
Total Permanent Employees	61.2	38.71	100
Temporary and Casual Employees	61.1	38.88	100
Grand Total	66.8	33.11	100

Table 2.15E Workforce Profile (500 - 1499 Employees) (%)

	Male	Female	Total
Executive Directors and Senior Managers	92.5	7.50	100
Junior – Middle Management	81.1	18.89	100
Professionals	70.7	29.23	100
Technicians and Associate Professionals	65.6	34.38	100
Clerical & Administrative workers	35.0	64.91	100
Service and Sales Workers	65.5	34.41	100
Skilled Agricultural and Fishery Workers	13.7	86.28	100
Craft and Related Trades	96.1	3.81	100
Operators and Assemblers	80.0	19.98	100
Laborers and Related Workers	81.6	18.36	100
Total Permanent Employees	75.4	24.51	100
Temporary and Casual Employees	69.5	30.48	100
Grand Total	68.9	31.06	100

Table 2.15F Workforce Profile (Employees 1500+) (%)

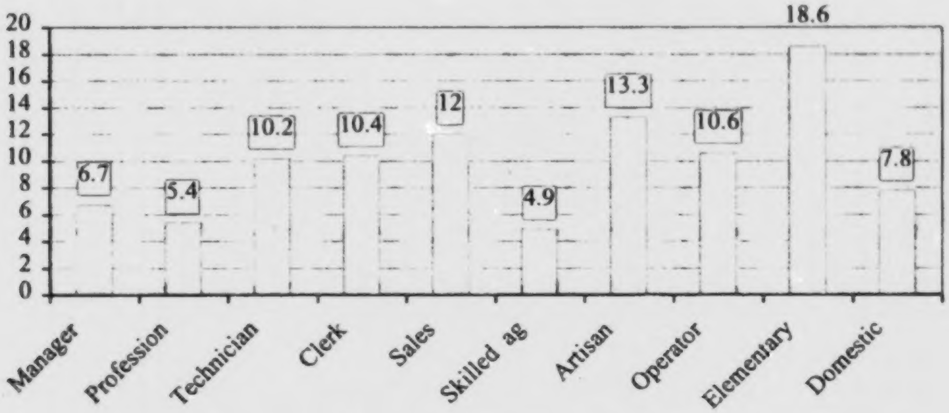
	Male	Female	Total
Executive Directors and Senior Managers	87.8	12.20	100
Junior – Middle Management	72.0	27.95	100
Professionals	76.4	23.54	100
Technicians and Associate Professionals	79.3	20.67	100
Clerical & Administrative workers	51.6	48.35	100
Service and Sales Workers	45.1	54.83	100
Skilled Agricultural and Fishery Workers	100.0	0.00	100
Craft and Related Trades	95.2	4.77	100
Operators and Assemblers	85.7	14.28	100
Laborers and Related Workers	84.4	15.59	100
Total Permanent Employees	81.6	18.35	100
Temporary and Casual Employees	65.9	34.07	100
Grand Total	77.1	22.88	100

Tables 2.15A-F sourced from South Africa in Transition 2001(StatsSA)

The following conclusions can be drawn from Tables 2.15A-F:

- Males dominate the labor force, averaging 68%;
- Males dominate the skilled to highly skilled occupational groups;
- Females dominate the occupational categories Services and Sales Workers and the Clerical and Administrative Workers.

Figure 2.3: Percentage of the employed in each occupational category, 1999



Source: South Africa in Transition, 2001 (Stats SA)

Figure 2.3 indicates the occupational categories of the 10.4m employed South Africans in 1999, and the following observations are important:

- A total of 26.4 per cent of all workers were doing elementary work either domestically or in the formal sector;
- 25.0 per cent of workers are involved in craft and related occupations as artisans or operators
- 22.4 per cent of the workers were involved in sales and clerical occupations
- Relatively few people were in management (6.7 %), professional (5.4 %) and skilled agricultural work (4.9 %).

There has been a change in the occupational structure among employed South Africans within each population group. Among employed Africans males, there has been a shift from elementary to artisan and operator occupations. Thus, in 1995, 34.4% of employed African men were in elementary jobs, while 35.3% were in operator or artisan jobs. In 1999, however, the proportion in elementary jobs were had decreased to 21.8%, but it had increased to 47.1% for those in operator and artisan jobs. But this trend is not evident among employed African females.

Among white men and women, there is an ongoing shift into the higher level occupations. Thus, in October 1995, 41.8% of employed white people were working in management, professional or technical occupations. But in October 1999, as many as 51.0% of employed white people were working in management, professional or technical occupations.

Changing labor market structure

Significant structural changes have occurred in the economy over the past three decades, and these changes have intensified in the past decade. Tertiary sector activities are rising in importance while primary and secondary sectors are becoming relatively less significant. The South African economy is in the process of becoming more service and knowledge-based each year. More complex and dynamic operating environments, together with continuous technological advances, are resulting in businesses requiring more skilled labor. The implications for South Africa's largely unskilled and low-skilled workforce are serious and far-reaching.

Table 2.16 shows that the relative share of value added by the tertiary sector rose from 55.5% of total value added in 1990 to 65.5% in the half of 1999. Over the same period, the relative share of the primary sector declined from 14% to 10.5% and that of the secondary sector from 30.5% to 24.5%. The growing significance of the services industries in the domestic economy is consistent with trends observed in the advanced economies of the world.

These economic sector shifts have been accompanied by increasing capital to labor ratios (increased use of technology and capital equipment). The combined impact of these changes has led to an increasing share of skilled and highly skilled jobs and a decrease in the share of unskilled and lowly skilled jobs. Together with job losses due to trade liberalization and low levels of both foreign direct investment and new local investment, the net effect on employment has been a dramatic decline in the total number of formal sector jobs. From 1960 to 1995 formal employment has been declining as a percentage of those economically active and both informal employment and unemployment have been increasing.

Table 2.16: Distribution of GDP between 3 sectors 1990 & 1999 (%)

	Composition of gross domestic product 1999	First half of 1999
Primary sectors	31.3	64.9
Secondary sectors	54.6	24.5
Tertiary sectors	14.1	10.6

The occupations showing the largest increases over a twenty-five year period were 'professionals', followed by 'managers' and then 'transport' occupations. These three occupation categories account for an increase of close to two million jobs. The number of workers in lower skilled occupations, farming, production work and laborers, either declined or increased only marginally, farming occupations experienced the most dramatic decrease – the number of jobs halved – which matches the decline in the sector's share of GDP. The number of laborers only increased by about 8% over the period (amounting to 50,000 jobs), and the share of laborers in total employment declined. The shift in labor demand shows that skilled workers at the upper end of the occupational ladder have benefited most from output growth, while those in unskilled positions at the bottom end have benefited least, and in some cases have significantly declined.

Informal Employment

Given that there have been limited employment opportunities in the formal sector for blacks, women and new labor market entrants in recent years, these groups have increasingly sought employment opportunities in the informal sector. This trend was demonstrated by the 1998 October household survey, which showed that informal sector employment had grown from 1 million to 1.3 million between 1996 and 1998.

As shown in table 2.17. Informal sector employment almost totally consists of workers on own account, domestic workers and workers employed by an unregistered employer. In terms of occupational distribution, the two largest informal sector occupations are domestic workers and those in unskilled work. Thus, while the informal sector does generate employment for many disadvantaged people, it essentially offers work that is a second best alternative to more skilled occupations and formal employment.

Table 2.17: Types of informal employment (%)

Types of informal employment	Percentage
Domestic workers	36.0
Employed by someone else	31.0
Workers for own account	30.0
Formal and informal sector	3.0

What is important to not though is that this sector remains crucial to providing some income to those rendered jobless by the formal sector or those unable to find first time employment.

Unemployment

South Africa has a population of approximately 43 million people of them about 12.6 million are economically active. Over 8 million of the economically active have jobs in the formal economy and another 1.3 million are employed in the informal economy. About 3.2 million are unemployed (official definition) of whom the vast majority is black and nearly 60% are women. 17 million are classified as either too young or old and another 13 million number of are not economically active. If the expanded definition of unemployment is used then the unemployed increases to about 5.6 million (representing a 37.5% unemployment rate).

Table 2.18 below provides the employment, unemployment and economically active population estimates for youth between the ages of 16 and 24 for the period 1994-99. It is evident from the table that youth employment rates are far below that of the growth in new entrants into the labor market. Hence, while the number of youth entering the labor market grew by over 800,000 individuals (35.2%), the number finding employment was only a quarter of this at about 200,000 individuals (18.3% growth in job openings) leaving approximately 600,000 youth unemployed during this period. This is a post-school placement rate of only 25%.

Table 2.18: Unemployment rate in the youth labor market

16-24 age cohort	1994	1999	Increases, 1994-99	Growth rates
Employed	1,098 004	1,299,589	201,585	18.36
Unemployed	1,188 002	1,791,184	603,182	50.77
EAP	2,286 006	3,090,773	804,767	35.20

Youth unemployment impacts principally on two groupings – the immediately out-of-school youth but also those young people who have not had any pervious employment experience. Unemployment is the highest amongst this latter category.

There is a complex relationship between education and unemployment. The lowest unemployment rate, using the official definition is found among those with a tertiary education (8.5%), followed by those with no formal education (16.5%). The unemployment rates among those with at least some education up to matriculation are higher. For example, it is 34.7% among those with some, but not complete, secondary education. This results in a curvilinear distribution.

Migration of High Skill Labor

Another key labor market indicator is migration data – particularly the net loss of key skills. Migration statistics do not reflect the number of South Africans who leave the country permanently, and refer only to self-declared emigrants. People who leave permanently under the pretext of, for example, temporary visits (on holiday or studying abroad) will not be included. The skills profile of people leaving the country is also not recorded.

Data from the destination countries have been generated by independent researchers as an alternative to created a more accurate picture of the South African brain drain as well as the nature of skills that are lost. The five major recipient countries of South African emigrants are the United Kingdom, Canada, the United States, New Zealand and Australia. The official figure comparison to independent research that was obtained via data from the five major recipient countries, which shows that 233,609 did so.

The official data from 1991 to 1997 reveals a rapid decline from a net gain of economically active persons to a net loss.

More than half (54%) of these official emigrants occupied professional or semi -professional or managerial positions, as is evident in table 2.19.

Table 2.19: Emigration according to occupation (1997)

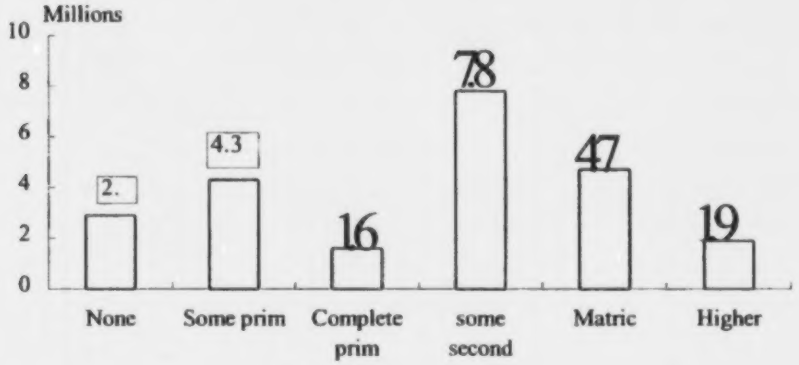
Occupation	Percentage (%)
Engineers	7.0
Education related	5.0
Accountants	5.0
Medical practitioners	2.0
Other professions	19.0
Managerial, executive and administrative	15.6
Clerical and sales	17.0
Services	2.0
Artisans and technicians	6.5
Agriculture	0.6
Other	20.0
Total	99.7

3. Current Skill Levels

Of the 23,3 million people in South Africa aged 20 years or more, Figure 2.4 shows that:

- 2.9 million had not received any formal schooling.
- 4.3 million had received at least some primary education (grade 1 to 6) as the highest level of their education.
- 1.6 million had completed primary school (grade 7).
- 7.8 million had attained at least some secondary education (grade 8-11 and those with a post-school certificate who had not completed their schooling).
- 4.7 million had completed grade 12 as their highest level of education.
- 1.9 million had tertiary qualifications (degrees, diplomas and certificates).

Figure 2.4: Number of people (millions) aged 20 years or more in each educational category, October 1999



Source: OHS 1999

Table 2.20 indicates the highest education level of those age 20 years or more by population group and sex.

- 17.5% of African women and 13.2% of African men in this age category had received no schooling, as against 0.3% of white women and 0.2% of white men.
- At the other extreme, 29.1% of white women and 33.9% of white men in this age group had received a tertiary education, as against 5.5% of African women and 5.2% of African men.

Table 2.20: Highest education level of those aged 20 years or more by population group and sex, october 1999

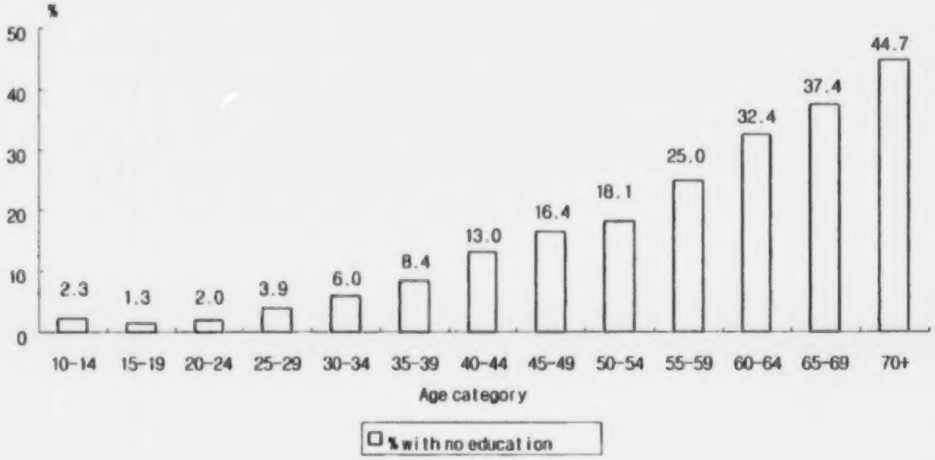
	Male				Female			
	African	**Coloured**	**Indian**	**White**	**African**	**Coloured**	**Indian**	**White**
Higher	5.2	6.3	15.3	33.9	5.5	6.6	13.4	29.1
Matric	16.5	17.7	38.1	45.0	14.8	14.5	32.2	43.8
Some sec.	34.8	39.4	37.0	19.6	32.5	39.7	32.7	24.7
Complete prim.	8.1	9.4	2.4	0.6	8.0	10.6	4.4	0.9
Some prim.	22.3	20.0	5.8	0.8	21.6	20.1	11.9	1.2
None	13.2	7.2	1.5	0.2	17.5	8.5	5.4	0.3

Source: OHS 1999

Figure 2.5 indicates the percentage of people who have not received any schooling by age in five-year age intervals. The figure shows that:

- Among those aged 70 years or more, 44.7% (right-most column of the graph) had not received any formal edcuation.
- This proportion decreases steadily with each successively decreasing age category.
- Among those aged 15 to 19 years in 1999, only 1.3% had not received any schooling.
- This proportion increases slightly to 2.3% amongst those people aged 10 to 14 years (left-most column of the graph), perhaps indicating, at least in part, that some children may be entering school at the relatively late age of at least 10 years.

Figure 2.5: Percentage of those aged 10 years or more with no education by age category, October 1999



Source: OHS 1999

Table 2.21: Formal employment levels by NQF qualifications (%)

Category	1994	1995	1996	1997	1998	1999
Workers with less than NQF 1	38.07	37.09	38.23	38.54	40.54	38.54
Workers with less than NQF 1	61.93	62.91	61.77	61.46	59.46	61.46

Table 2.22: Persons employed according to qualification level and race (%)

Qualification / Race	African	Colored	Indian	White
Higher Education & Training (Degree and diplomas)	26.4	0.1	7.4	58.7
FETC Senior Secondary School Leaving Certificate (Grade 10-Grade 12)	38.9	0.1	4.6	46.5
GETC (Grade 9 completed)	64.9	0.2	4.3	15.0

4. Future Skill Demands

Educational level is a significant determinant of how one is affected positively or negatively from changes in employment. The largest increase in employment was for individuals with tertiary education whose demand rose by 2000% over the period from 1990-1995. Demand for those who completed secondary education (Matriculation) increased by over 350%. While demand for those individuals who have not attained a matriculation certificate increased by far less, 53%. The demand for the labor of those with primary or less education, decreased.

Although conventional economic analysis argues that primary schooling shows the biggest returns to human capital the results here demonstrate that primary schooling is a necessary but no longer a sufficient human capital base for gaining employment. Those with no education have been the most severely disadvantaged in the labor market over the last 24 years. South Africa's labor demand patterns show a high and increasing demand for individuals with secondary education or more. Those who have completed secondary education will do better and the best employment opportunities will go to those with tertiary education. Standard bank economist, Iraj Abedian, concludes his recent analysis of changes in the labor market by writing:

> *Structural change has implications for policy makers, business and organized labor. The process implies that higher skilled labor is required in "new" as well as "old" economy activities. The current disparity between what the economy needs and the skills that labor possesses means that the level of human capital is forming a ceiling to economic development. Because creating jobs for unskilled people has become harder, more training and education are required to lift the level of skills.*

The total number of formal positions in the South African non-agricultural labor market amounted to ±5,951,000 in 1998.

Total employment in the formal economy (excluding agriculture) is expected to increase by about 45,000 job opportunities between 1998 and 2003, which amounts to growth of less than 1% over the entire period.

Growth rates vary considerably across broad occupational categories. The highest growth rates are among professionals (9.6%) and managers (6.2%), followed by artisans (3.9%). Little change is expected at the level of clerical/sales/service workers and a substantial decline in employment is expected at the level of semiskilled and unskilled workers (-3.4%).

Most jobs are expected to be created at the professional level, with total employment of professionals likely to rise by 93,000 between 1998 and 2003. Employment rise of 16,000 and 12,000 are expected for managers and artisans, respectively. An estimated 71,000 semiskilled and unskilled positions are expected to be lost over the five-year period.

The differing expected employment growth rates are likely to result in a continuation of the change in the occupational structure of employment experienced in South Africa since 1965. The professional, managerial and artisan occupations are expected to increase their shares of total employment over the period 1998 to 2003. Professionals show the largest gain, from 16.2% of total employment in 1998 to 17.6% in 2003. Clerical/sales/service workers and semiskilled/unskilled workers are both expected to show a decline in their shares of total employment over the five-year period. The latter category is expected to show the largest decline, from 34.6% to 33.1%.

There are considerable differences between employment forecasts in the government (central, provincial and local government) and non-government sectors. Whereas total employment in the private economy is expected to grow by almost 3% between 1998 and 2003, it is expected to decline by 4.5% in government. The major reason for these differences is the budgetary constraints facing government, coupled with a commitment to downsize the public service.

Table 2.23: Change in the Occupational Structure of Employment in S.A., 1965-2003(1,000's)

	Professional	Managerial	Clerical/ Sales/service	Artisan	Semi- /unskilled
1966	227	63	990	198	1,942
1971	339	92	1,346	273	2,562
1975	412	102	1,471	284	2,652
1981	492	123	1,699	306	2,889
1985	563	120	1,827	309	2,548
1990	690	211	2,130	324	2,666
1994	751	225	2,108	285	2,140
1998	964	255	2,372	303	2,057
2003	1,057	271	2,370	314	2,000

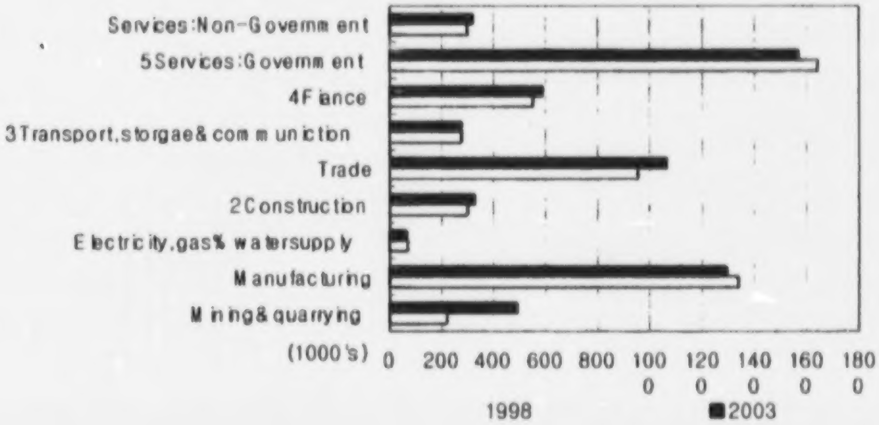
Employment Growth per sector

For the period 1998 to 2003, a decline in employment is expected in four sectors (Mining and Quarrying; Manufacturing; Electricity. Gas and Water Supply; and the Government section of Community, Social and Personal Services), an increase in three (Construction; Wholesale, Retail and Accommodation and Finance, Real Estate and Business Services), as well as the non-government section of Community, Social and Personal Services. The remaining sector (Transport, Storage and Communication) will more or less stay the same.

The Mining and Quarrying sector will experience job losses due to the shift from underground mining to open-cast mining, the latter being more capital intensive than the former. There is also an increasing use of labor-saving technology in underground mining.

In the Manufacturing sector, only clothing and leather and footwear are expected to create new employment opportunities over the next five years. Subsectors such as furniture, printing and publishing and wood and wood products are all subject to increasing levels of mechanization, which will likely result in employment losses. The largest absolute decreases are expected in the food and chemicals subsectors.

Figure 2.6: Sectorial Distribution of Total Employment, 1998and 2003.



The Electricity sector is expected to decrease (± 5,000 jobs) due to the rationalization that is likely to occur after the amalgamation of municipal electricity departments with Eskom. Most of these job losses are expected to occur in the municipalities since the functions of existing positions in Eskom.

Both the building and civil engineering subsectors (which collectively make up Construction sector) are highly labor intensive and moderate growth (± 26,000 jobs) is expected in these sectors.

The Wholesale, Retail and Accommodation sector is expected to be the fastest growing

BEST COPY AVAILABLE

major sector (in terms of employment growth) as well as the largest absolute contributor of jobs (± 109,000 new positions). Moderate growth is expected in wholesale and retail, while fast growth is expected in catering and accommodation.

Total employment in the Transport, Storage and Communication sector is not expected to show any change over the period, since jobs created in the communication industry are matched by job losses in the transport industry.

The Finance, Real Estate and Business Services sector is expected to be the second-largest contributor to employment creation over the period under review and it is estimated that a net 46,000 jobs will be created in this sector.

Banking and Insurance (subsectors within the Finance, Real Estate and Business Service sector) are expected to show net job losses (12,000 and 6,000, respectively). However, these losses will be more than compensated for by rapid growth in other business services, for example accounting, management consultancy, security, and information technology, which are expected to grow by ± 59,000 positions.

The Community, Social and Personal Services sector is expected to be the one that sheds the most jobs, largely due to the expected decrease in employment within central, provincial and local government (collectively, -74,000). These job losses are to some extent likely to be neutralized by ± 22,000 positions that are expected to be created in the non-government part of the sector, which includes private health, cultural and recreational services and education (especially private educational institutions).

5. Inequalities in South Africa

Income Inequality

Income inequality is a social reality in South Africa that places a several limit on HRD. Between 1975 and 1991, the income of the poorest 60% of the population dropped by about 35%. By 1996, the gulf between rich and poor had grown even larger. The poorest quintile received 1.5% of the total income, compared to the 65% received by the richest 10%.

Table 2.24: Annual Household Income in Rands, 1996

	African	White	Colored	Asian	Average
Poorest 50%	2,383	29,549	8,214	17,878	3,572
41-60%	9,120	83,506	25,967	49,569	15,624
61-80%	19,183	134,821	46,463	80,882	36,797
81-90%	37,093	207,243	77,866	125,962	78,620
Richest 10%	108,568	406,091	168,005	258,244	222,734
Average	21,180	119,818	42,359	71,662	42,048

Source: A nation at work for a better life for all, Human Resource Development Strategy for South Africa, 2001

The extreme income inequality suggested in table 2.24 above limits the ability of individuals, households and government to finance the enhancement of skills and education and training that are critical pre-requisites for improved participation in the labor market, and therefore, improved income. Highly skewed income inequality also places a dampener on generating increased aggregate demand for goods and services, thereby limiting economic growth. A vicious cycle of income inequality, low skills and poor education, has limited economic growth.

Labor market discrimination

The Department of Labor's Employment Equity Report also provided qualitative indicators of barriers to employment equity in the labor market, for example, in the areas of access to training, recruitment practices, succession planning, performance appraisal and job grading systems. In general, discrimination is still present in the labor market and better qualitative measures will be needed to monitor these problems in the future.

One study that highlights these more hidden discriminatory practices is the HRSC study of the first employment experiences of 1806 graduates who graduated in the period 1991 to 1995. The study shows that the labor market discriminates against university graduates seeking employment with respect to population group and academic institution. African and other graduates from historically black universities (HBU's) were more likely to battle to find employment. Although graduate unemployment is low at only 2%, more than double the respondents graduating from the historically white universities (HWU's) found employment immediately (65%), as opposed to 28% of the respondents from the (HBU's). with the exception of the Medical University of South Africa (immediate employment at 80%), all the HBU's fared worse in terms of immediate employment than the HWU's.

Inequalities in the composition of staff and students in Education and Training institutions

Another important measure of inequality is the extent of change in the racial and gender composition of students and staff at South Africa's education and training institutions. Table 2.25 shows the latest results for students in Higher Education and Training.

Table 2.25: Student headcount in HET by population group, 1993-1999

	1993	1999
White	47%	29%
Indian	7%	7%
Colored	6%	5%
African	40%	59%

Black students (and specifically African students) are now in the majority in South Africa's HET institutions. This is an improving trend, but inequalities in the staffing of institutions still prevail. In 1998, whites still constituted 80% of academic staff in HET, with Africans at 12%, Coloreds at 3%, and Indian academic staff at 5%. In the Technical Colleges, during 2000, whites still constituted 61% of academic staff, with Africans at 28%, Coloreds at 8%, and Indian academic staff at 3%. This clashes markedly with the student composition that changed dramatically in the past five years. Student enrolments in Technical Colleges are now: Africans (71%), Whites (18%), Coloreds (9%) and Indians (1%).

There is a powerful imperative for government to use planning and funding mechanisms to encourage education and training institutions more persuasively to transform the racially skewed character of their staff compositions – clearly, a continuing legacy from the past. Data will need to be continuously collected, analyzed and acted upon in future – especially to measure and promote black student participation in post-graduate programs and fields of study such as medicine, law and engineering.

6. Disease Impacts on the Economy

A recent report released by UNAIDS (2000) suggests that South Africa has the fastest growing HIV/AIDS epidemic in the world, with more people infected than in any other country in the world. The report estimates that over four million South Africans are HIV positive. Prevalence rates are highest among young people, especially teenage girls.

The advent of HIV infection and AIDS related illnesses, as well as other poverty related diseases such as cholera, need to be taken into account when projecting the future labor market needs of the South African economy. To illustrate, recent population projections, that have incorporated the effect of AIDS and other diseases, indicate that the population rate has fallen. These forecasts also estimate that by 2004 the population growth rate will have dropped to below 1 per cent per annum and will reach 0 per cent by 2011.

HIV infection rates are forecast to peak at 16.7 per cent in 2006 and taper off thereafter. The number of AIDS deaths is expected to rise rapidly and are projected to peak with a four to five year lag in 2010 with 1.8 AIDS deaths per 100 people and 256 AIDS deaths per 1000 normal deaths. AIDS deaths are mainly concentrated in the 25-50 age groups, followed by the 0-9 age group, which reflects the high rate of infant deaths associated with mother-to-child transmissions. This age distribution of AIDS-related deaths shows that the labor force is much more affected by AIDS than the overall population. Thus the AIDS epidemic, coupled with the effects of other poverty-related diseases, probably represents the most serious exogenous threat to ensuring that the domestic economy accumulates a sufficiently skilled and well-trained workforce in the long run.

Problems with HRD

The scale of the South African HRD challenge is daunting. Table 2.26 provides an overview of some of the key 'quality of life' indicators that currently describe our labor market, society and economy. These are compared to other selected countries, with an indication of their current Human Development Index (HDI) ranking.

Table 2.26: Key Human Development Indices, 2000

HDI Rank	Country	Life expectancy at birth	People living with Aids		Under-5 mortality rate	GNP per capita	Population growth rate	
		Years	Total No	Adult rate (% of 15-49 age cohort)	Per thousand live births	(US$) 1998	1975-1998	1998-2015
3	USA	76.7	820,000	0.76	8	29,240	1.0	0.7
4	Australia	78.3	11,000	0.14	5	20,640	1.3	0.9
10	UK	77.2	25,000	0.09	6	21,410	0.2	0.1
61	Malaysia	72.0	68,000	0.62	10	3,670	2.5	1.5
74	Brazil	66.8	580,000	0.63	42	4,630	1.9	1.1
103	RSA	54.7	2,900,00	12.91	83	3,310	2.0	0.6
128	India	62.6	4,100,000	0.82	105	440	2.0	1.2
130	Zimbabwe	44.1	1,500,000	25.84	89	620	2.7	1.0
138	Kenya	52.0	1,600,000	11.64	117	350	3.3	1.5

Two features stand out from this snapshot of our current situation. One is the likely impact of poverty related health issues on the population, including HIV-AIDS, as well as other infectious diseases. These are undoubtedly both the result and the cause of poverty and deprivation among the population. The other feature is the high degree if inequality prevalent in our society, especially around race, gender and disability. These differentials are reflected in the Gini co-efficient, and apply to household income, as well as to the occupational structure of the labor market. South Africa's index of 0.60 makes it the most unequal society after Brazil (0.63).

III. Vocational Education and Training

Korea

1. Education system

Korea uses a school 'ladder' following a similar track of 6-3-3-4, providing six years of compulsory primary education, three years of middle school, and three of high school, followed by two or four more years in colleges and universities.

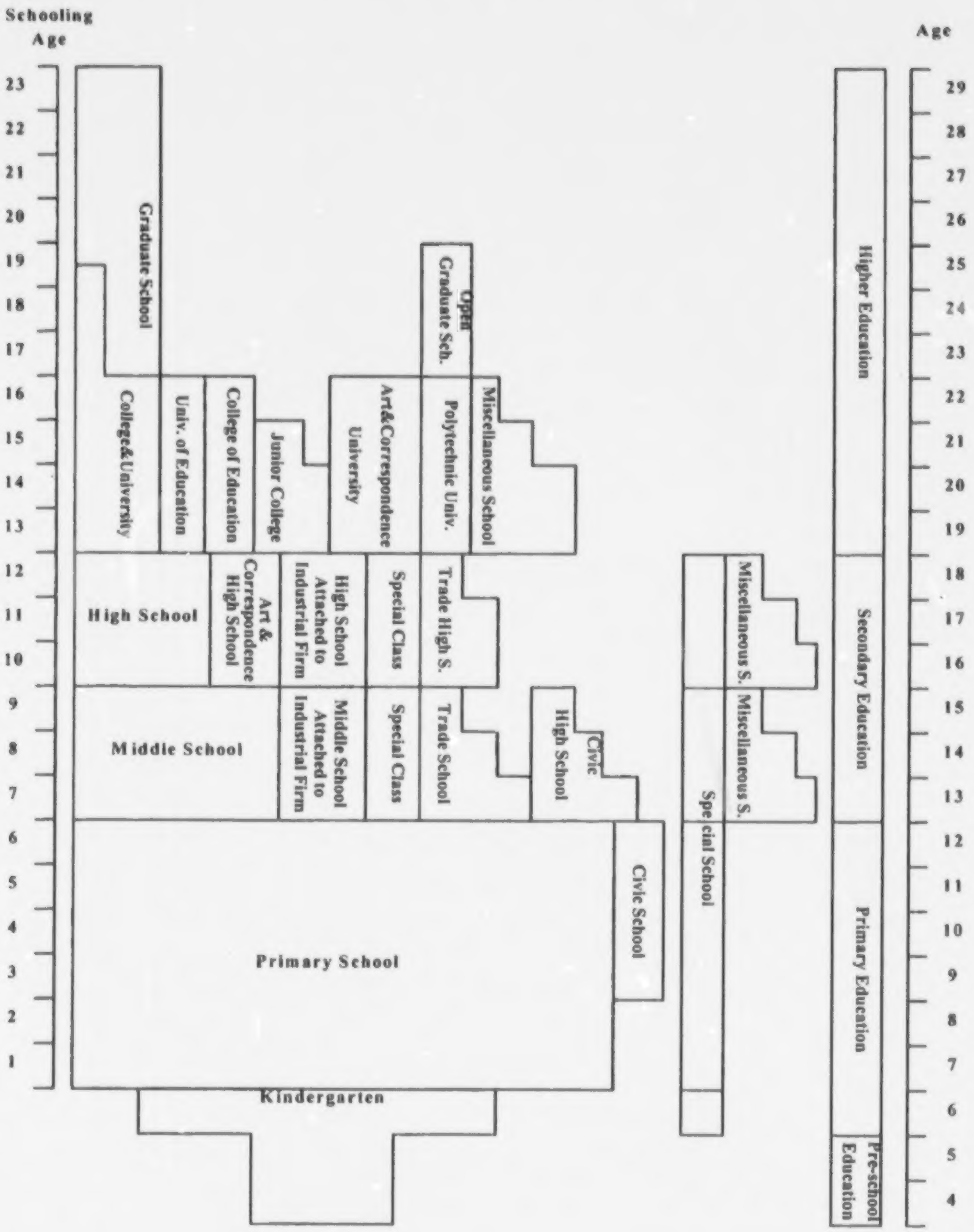
The provision of Education Law, which pertain to the educational system, read as follows: "All citizens have the right to receive education according to their ability; all should receive at least primary education and such education as may be prescribed by law; compulsory education is guaranteed in such manners as shall be prescribed by law; the state is responsible for promoting lifelong education; and basic matters related to the management of systems of school education and lifelong education, financing of schools and the status of teachers are prescribed by law."

Education Law (article 81) stipulates that the following schools be established; 1) primary school, middle school, high school and college and university; 2) university of education and college of education; 3) junior college, air and correspondence university and polytechnic university; 4) trade school and trade high school; 5) civic school and civic high school; 6) special school; 7) kindergarten; and 8) miscellaneous schools. Among these, the schools in the first category constitute the backbone of the education system. Figure 1 shows details of the education system in Korea.

The academic year consists of two semesters; the first semester begins on 1 March and ends on 31st August. The second semester spans 1 September to the end of February. Universities, colleges of education and junior colleges are operated within two or five semesters according to school regulations.

Nearly 100 per cent of those eligible attend primary schools. There were 4,089,429 students enrolled in 5,322 schools in 2001.

Figure 3.1: School system


Schooling Age
Age
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
Graduate School
Open Graduate Sch.
College&University
Univ. of Education
College of Education
Junior College
Art&Correspondence University
Polytechnic Univ.
Miscellaneous School
High School
Art & Correspondence High School
High School Attached to Industrial Firm
Special Class
Trade High S.
Middle School
Middle School Attached to Industrial Firm
Special Class
Trade School
Civic High School
Primary School
Civic School
Kindergarten
Miscellaneous S.
Miscellaneous S.
Special School
Higher Education
Secondary Education
Primary Education
Pre-school Education

BEST COPY AVAILABLE

Table 3.1: Current Status of Schools in Korea

Classification	School			Classes & Dept.	Students	Teachers
	Total	Nat'l & Public	Private			
Grand Total	19,058 (709)	12,752 (691)	6,306 (18)	260,920	11,936,398	433,619
Kindergarten	8,407	4,210	4,197	21,122	545,142	28,975
Primary School	5,322 (631)	5,246 (631)	76	115,015	4,089,429	142,715
Middle School	2,770 (59)	2,098 (59)	6727	49,120	1,831,152	93,385
Academic High School	1,210	597	613	30,296	1,259,975	64,504
Vocational High School	759	442	317	17,867	651,198	39,810
Special School	134	47	87	2,627	23,769	4,815
Civic School	1	-	1	3	140	3
Civic High School	5	1	4	13	302	20
Trade High School	15	-	15	127	5,408	171
Miscellaneous School (Middle School Level)	10	2	8	97	4,443	188
Miscellaneous School (High School Level)	11	8	3	114	3,465	290
Air & Correspondence H. S.	40	40	-	347	14,601	-
Junior College	158 (1)	15	143 (1)	5,110	952,649	11,897
Teachers College	11	11	-	13	21,418	7104
College & University	162 (18)	26 (1)	136 (17)	9,723	1,729,638	43,309
Air & Correspondence University	1	1	-	19	370,661	111

Polytechnic University	19	8	11	1,103	180,068	2,456
Graduate School	<905> {18}	<151>	<754> {18}	7,880	243,270	-
Open Graduate School	<0>	<0>	<0>	0	0	-
Miscellaneous School (College Level)	3	-	3	56	2,013	42
Miscellaneous School (Junior College Level)	1	-	1	11	645	7

Source: Ministry of Education and Human Resources Development[8], Statistical Yearbook of Education, 2001.

Note: 1. The figures in ( ) indicate the number of branch schools, and are not included in the Total number of schools.

2. The figures in < > are not included in the total number of school.

3. The status of faculty members of graduate schools is included in status on those of college and university.

4. { } indicates the number of 'graduate school colleges'.

5. The number of students on leave of absence is included.

Middle school education with a duration of three years is offered for students aged 12–15. All applicants from primary schools are accepted and allocated by lottery to schools within their residential districts. Regular activities are divided into required and elective subjects.

As of 2001, 99.9 per cent of all primary school graduates moved on to middle schools. Middle school education is free only in rural areas, and in the near future it is to become compulsory and free for all.

High school education aims at providing advanced general and specific education on the basis of middle school education. High schools are classified into academic, vocational, and other high schools–foreign language, art & athletic, and science high schools. There was a total of 1,969 high schools, of which 759 were vocational high schools in 2001. High schools, both general and vocational, enroll more than 90 per cent of their age group.

---

[8] Ministry of Education was reorganized as the Ministry of Education and Human Resources Development in January, 2001.

Students in academic high schools, where advanced general education is practiced, select a major in the second year from the areas of humanities and social sciences, natural sciences, and vocational education. Their selections are based on the students' aptitude and interest, in turn, which provides a link with the school courses and their future careers. The majority of students opt to spend the first two years as preparation for university application. Students may transfer to the vocational track at the beginning of the third grade.

The higher educational institutions are divided into four categories: colleges and universities; universities of education and colleges of education; junior colleges, the Air & Correspondence University, polytechnic universities[9] and other schools (including theological colleges and seminaries). Most higher educational institutions are under the supervision of the Ministry of Education and Human Resources Development. The Ministry of Education and Human Resources Development has control over such matters as student quotas, qualifications of teaching staff, curriculum and degree requirements. About 84 percent of academic high school graduates and 42.0 per cent of vocational high school graduates moved on higher educational institutions in 2000.

2. The vocational secondary education system

The largest element of Korea's system of vocational education and training is the system of vocational education at schools. Initial training (pre-employment education and training provided at the senior secondary level [vocational high schools] and post-secondary level junior colleges).

Vocational high schools aim to educate capable skilled workers equipped with sound vocational awareness and professional knowledge to enable them to cope with rapid changes in an information-oriented industrial society. They provide technical-vocational education programs in the specialized fields of agriculture, technology, business and commerce, marine & fisheries, and home economics. These vocational high schools are the major sources of the craftsmen among the industrial workers in Korea.

---

[9] Open university was renamed polytechnic university based on the Higher Education Law which came into operation in March, 1998. However, open universities are named in various ways depending on the mission and objectives of the university.

In 2001 there were 759 technical and vocational high schools with a total enrollment of 651,198 which accounted for about 34.1 per cent of total high school enrollment.

As can be seen in table 3.2, most vocational students are taking programs in senior secondary schools of business/commerce and technology. Just over 4 per cent are studying in agricultural and fishery/marine high schools.

Table 3.2: Number of vocational high schools and students

Classification	Schools		Students	
	Number	Proportion of vocational students	Number	Proportion of vocational students
Agricultural	27	3.6	16,792	2.6
Technical	209	27.5	231,716	35.6
Business/ Commerce	225	29.6	227,710	35.0
Fishery & Marine	8	1.1	5,016	0.8
Vocational	73	9.6	49,548	7.6
Comprehensive	217	28.6	120,416	18.5
Total	759	100.0	651,198	100.0

Source: Ministry of Education and Human Resources Development 2001, Statistical yearbook of education

The curriculum for vocational high schools is composed of general and vocational subjects. Students are required to take between 204 and 216 units during the three years of study period of six semesters. Of the 214-216 units, students are required to take 104–154 units of general subjects (that is, mathematics and science) and 88–122 units of vocational subjects. Of the 82–122 units allocated to vocational subjects, at least 50 per cent of the units or 41–61 units should be allocated for practical sessions.

The schools operate effective field training programs in co–operation with individual industries. The field training can be made and performed from 2 to 68 units as the extra-curricular activities added to the independent curriculum from the first year, depending on the discretion of the principal. The duration of on-the-job training varies, ranging from 1–6 months in agricultural and commercial high schools, 1–12 months in technical high schools to 3–12 in marine and fisheries high schools.

A new program which is called the dual system (the Two-plus-one Program) was introduced in technical high schools in 1994. The program comprises two years of vocational education in schools, followed by one year of practical 'hands-on' field training in industrial–based companies. In 1998 the program was operating in 40 designated model schools and 9,110 students were taking part in on-the job training at 1, 928 industrial companies. As of 2001, the program was operated in 24 technical high schools with participation of 4.914 students.

3. Formal post-secondary vocational education

Post-secondary vocational education under the formal education system is provided at junior colleges, polytechnic colleges, technical colleges and polytechnic universities.

1) Junior colleges

Status

Junior colleges offer two–or–three year post-secondary programs and are the direct outgrowth of the increasing demand for technical manpower attendant with rapid industrialization. Since their establishment in 1979, the number of junior colleges has grown to 158 as of 2001 with an enrollment of 952,649 (including students on leave of absence).

The purpose of junior college education is to produce middle-level technicians equipped with a solid base of theories and skills. Their specialized courses are grouped into technology, agriculture, nursing, fishery, health, commercial and business, home economics, arts and athletics, and so on with two– or three–year programs depending on the courses. The nursing, clinical pathology, physical cure, radiation, fishing, navigation and engine programs require three years of education. The communication program is the only one requiring two-and-a-half years of study and the rest require two years of education. The number of junior college students by program is shown in table 3.3.

Entrance

High school graduates and those with an equivalent academic background may enter junior colleges. Admission to junior colleges is determined on the basis of school achievement, scholastic achievement test, interview, and aptitude tests. Thirty to fifty per cent of the freshmen quota is reserved for the graduates of vocational high schools, craftsmen qualified by the national technical qualifications system and workers having a specified amount of industrial experience.

Table 3.3: Number of junior college student by program

Classification	Enrollments by Course			
	1st year	2nd year	3rd year	Total
Humanities	18,598	16,630		35,228
Social Sciences	93,263	87,223		180,486
Natural Sciences	273,962	243,948	49	517,959
Medical & Pharmacy	27,049	27,519	18,322	72,890
Arts & Physical Education	65,642	55,653		121,295
Teaching Profession	12,573	12,218		24,791
Total	491,087	443,191	18,371	952,649

Source: Ministry of Education and Human Resources Development (2001), Statistical yearbook of education.

Curriculum

For the effective achievement of the educational goals, junior colleges develop and operate a practical curriculum through on-site training via school–industry co–operative programs and vocational specialty training plans and job sheets. Specialty is emphasized as preparation for the national certification test. Liberal arts education is given a place within the primary concern for the functional orientation of the programs. Here, work ethics are instilled.

Junior colleges have adopted the credit system. The completion hours needed for earning one credit, the minimum credits needed for graduation, the standard credits which can be acquired per semester and the maximum credits to be acquired are decided by school regulations at each junior college.

Elective courses consist of a minimum of general subjects; the allotment ratio of the credits is decided by school regulations and on-site training is given 1–3 credits. The trend is to put more weight on the professional courses rather than the elective courses.

Industry–School Cooperation

It is envisioned that junior college education can contribute to the development of industry through the following measures: incorporating internships for students, providing industry field training of junior college faculty, etc.

Based on the Educational Reform Program, a customized training system responding to industrial demands was implemented in more than ninety junior colleges' of which 59 were provided with financial support from the government in 2000.

Entrance to University

Although junior vocational colleges place emphasis on practical education aimed to produce mid-level technicians, it is not necessarily a terminal point of schooling. Doors are kept open for their students to continue education at universities. For employed youths, it provides avenues to polytechnic universities as well as to the Korea Air and Correspondence University. As efforts are intensified to ensure the relevance of junior college education to industrial needs, the percentage of employment among junior college graduates is increasing.

In order to strengthen the junior colleges' capacity for vocational education, programs linking the curriculum of the second and third years of vocational senior secondary schools with that of the vocational college (2+2) have been implemented in some schools. Students who have completed vocational senior secondary school courses are given priority in the selection process for entry into colleges in related fields of study. From 1996, graduates of junior colleges receive associate degrees.

2) Polytechnic colleges

Polytechnic colleges are publicly funded post-secondary vocational education and training institutions. They provide two-year programs to train multi-skilled technicians and 3–12 months' programs to train master craftsman in the specialized area of technology. They provide 29 courses in new technology-based trades such as production automation, mechatronics, information and communication.

Graduates of multi-skilled technician programs receive industrial associate degree and graduates of master craftsman programs are eligible to take the national technical qualification test for master craftsman.

As of 2001 there were 22 polytechnic colleges with a total enrollment of 10,525 students. Since their establishment in 1997, the employment rate of graduates has been very high, up to 100 per cent.

3) Technical colleges (universities)

Large Korean companies have their own corporate schools which are called corporate technical colleges (universities). Some companies have independent schools, while others have schools at the enterprise group level. Corporate schools offer three levels of programs for selected employees: junior college, college, and graduate programs.

In the early 1980s corporate schools began in the early 1980s to offer graduate courses for college graduate white-collar employees, but since the late 1980s have expanded to offer lower-level courses for blue-collar employees. There were two junior college programs, two college programs and seven graduate programs in 1999 (table 3.4). Most courses absorb only a minority of employees, with a range of 20–100 trainees.

Table 3.4: Current status of technical colleges (universities)

Type of program	Number of schools	Capacity	Enrollment	Number of graduates
Junior college	2(5)	105	45	1,706
College	5(3)	325	158	5,396
Graduate	7(5)	1,496	1,232	1,772
Total	14(13)	1,926	1,435	8,874

(   ) : the number of schools closed for the time being

Source: Ministry of Science and Technology 1999, unpublished data.

The schools provide both general education and technical training. Employers of companies with company schools created a standard for the number of school hours, curriculum, and facilities. The required minimum school hours are 1,120 for a junior college program, 2,240 for a college program, and 1,120 for a graduate program. However, a majority of schools do not meet these standards.

Corporate school graduates receive no marketable qualification from the program, but they are recognized as graduates of junior-college, four-year college, or graduate programs within an enterprise group with which the company is affiliated.

The government enacted laws on the establishment and operation of technical colleges in 1997. Those who complete programs which are accredited and authorized by the Ministry of Education and Human Resources Development receive associate degree, while others do not.

4) Polytechnic universities

Polytechnic universities aim to provide employed youth and adults with an alternative approach to higher education. The requirements for admission to a polytechnic university are the same as those for regular universities. Priority in selection is given to persons with experience in industrial organizations, holders of national technical qualifications and graduates from vocational high schools.

There are no academic years in the curriculum. Over 50 per cent of the admission quota is given the opportunity both to improve their job skills and to be educated continuously by being offered evening classes.

Having begun with the foundation of Kyonggi Open University of Technology in Seoul in 1982, there were 19 polytechnic universities with a total enrollment of 180,068 students in 2001.[10]

Adults in post-secondary vocational education

---

[10] Open universities were renamed polytechnic universities in 1998.

The enrollment rate of students in post-secondary educational institutions is very high in Korea. As of 1999, about 63.7 per cent of the age group were enrolled in higher educational institutions. However, the enrollment rate of adults aged 25–64 in post-secondary education was about 23.9 per cent.

The participation rate of adults in post-secondary vocational education is low. As of 1999, only 9.1 per cent of junior college students and 19.7 per cent of polytechnic university students are aged over 25 years old (Table 3.5).

Table 3.5: Participation rate of adults in post-secondary vocational education (%)

	1985	1990	1995	1997	1999
Junior college	5.5	4.0	5.0	7.3	9.1
University of Education	17.7	17.3	7.3	10.1	12.5
College and university	10.0	12.3	10.0	10.1	11.7
Air & correspondence University	73.0	60.4	83.1	70.0	87.4
Polytechnic university	50.0	32.6	22.3	27.2	19.7
Total	28.6	17.8	24.6	22.7	33.5

Source: Ministry of Education and Human Resources Development 1999, *Statistical yearbook of education*.

Participation of adults in education and training

There are little data on the participation of adults in vocational education and training in Korea. The most reliable data existing in Korea are from *The social statistics survey* conducted by the National Statistics Survey in 1996.

According to the survey, the participation rate of people aged over 15 in lifelong learning (workplace education, learning at private institutes, liberal arts education, job training, learning through TV and radio and others) is 17.37 per cent. Overall, people who are young and male are more likely to take lifelong learning than if they are old and female.

Table 3.6: Annual participation rate in adult learning programs, age and gender, 1996

	Partici-Pation rate	Work Place Training	Learning at institutes	Cultural arts Program	Job Training	Mass-Media Lectures	Others
Total	17.37	9.08	3.47	3.13	2.24	3.79	0.38
15–19	19.36	10.79	7.77	2.06	1.43	2.19	0.15
20–24	24.83	13.51	10.80	2.81	1.96	3.93	0.28
25–29	25.69	15.29	8.01	3.13	1.57	5.47	0.50
30–34	22.76	13.36	3.87	4.30	1.72	5.61	0.61
35–39	20.62	11.35	2.95	4.28	2.12	4.80	0.55
40–44	17.16	8.23	1.90	4.00	2.52	3.87	0.43
45–49	15.79	7.44	1.58	3.19	3.27	3.70	0.46
50–54	12.47	5.64	1.14	2.40	2.87	2.97	0.26
55–59	10.27	4.03	0.39	2.33	3.26	2.14	0.15
60–64	8.61	2.37	0.26	1.81	3.45	1.87	0.15
65+	3.43	0.42	0.11	1.20	1.25	0.68	0.07
Men	21.62	13.18	3.35	2.45	3.73	3.78	0.42
Women	13.49	5.34	3.58	3.74	0.88	3.79	0.35

Source: National Statistical Office 1996, *Report on the Social Statistics Survey*

The results of the survey show that the chances of adult learning increase with educational qualifications; those holding higher education qualifications being most likely to have access to adult learning (see table 3.6)

.

There are differences in the participation of adults in lifelong learning in terms of occupation. Those in managerial, professional and clerical posts undertook more education than other groups.

Table 3.7: Annual participation rate in adult learning programs, educational level and occupation, 1996

	Partici-Pation rate	Work Place Learning	Learnig at institutes	Cultural Arts Programs	Job Training	Mass-Media Lectures	Others
Total	17.37	9.08	3.47	3.13	2.24	3.79	0.38
Educational							
Primary graduate	4.28	0.54	0.17	0.82	2.38	0.59	0.08
Middle S	8.29	2.32	0.66	1.83	2.39	2.09	0.22
High S	18.53	9.07	3.52	3.60	2.19	4.25	0.27
College	41.82	27.54	10.68	6.55	2.01	8.87	1.23
Occupation							
Managerial Professional	44.56	32.50	9.43	6.69	2.35	8.26	1.19
Clerical	39.53	29.33	11.49	4.17	1.88	5.30	0.67
Sales & service	11.38	4.49	1.77	2.31	1.65	2.85	0.17
Agriculture & fishing	13.67	0.27	0.30	1.65	11.61	1.24	0.05
Production	12.67	7.15	1.59	1.62	1.86	2.73	0.23

Source: National Statistical Office 1997, *Report on the social statistics survey.*

Participation of adults in VET programs

In the survey, adult training is categorized into workplace learning and job training.[11] The participation rate of people in workplace learning was 9.1 per cent and in job training was 2.24 per cent. Overall, more men participated in education and training. People who are male, young, employed, with a high educational level are more likely to participate in workplace education and a longer period of training than old, unemployed, and with a low educational level. People who are old and poorly educated are more likely to participate in job training.

---

[11] There is no clear differentiation between workplace learning and job training in the questionnaire. It is reported that workplace learning included training in corporate culture, training by target group, foreign languages, etc undertaken at the workplace. Job training included initial training, and job upgrading training undertaken at the

Table 3.8: Participation rate of adults in vocational training

	Total	In-house training		Vocational training	
		Rate	Day	Rate	Day
Total	17.4	9.1	12.3	2.2	8.9
Age					
15–19	19.4	10.8	1.9	1.4	0.3
20–24	24.8	13.5	1.5	2.0	0.5
25–29	25.7	15.3	2.2	1.6	0.3
30–34	22.8	13.4	1.7	1.7	0.2
35–39	20.6	11.4	1.5	2.1	0.2
40–44	17.2	8.2	0.8	2.5	0.2
45–49	15.8	7.4	0.9	3.3	0.2
50–54	12.5	5.6	0.6	2.9	0.2
55–59	10.3	4.0	0.4	3.3	0.1
60–64	8.6	2.4	0.2	3.5	0.1
65+	3.4	0.4	-	1.3	-
Educational level					
College graduates	41.8	27.5	14.4	2.0	12.7
High school graduates	18.5	9.1	10.2	2.2	11.9
Middle school graduates	8.3	2.3	6.5	2.4	7.8
Primary school or below	4.3	0.5	8.4	2.4	3.0
Gender					
Men	21.6	13.2	12.6	3.7	7.4
Women	13.5	5.3	11.7	0.9	14.8

Source: National Statistical Office 1997, *Report on the social statistics survey.*

---

workplace as well as in other institutions.

4. Vocational training

1) Vocational training system

In the 1960s the Korean government established a vast economic development plan and restructured the vocational education and training system in order to supply the manpower necessary to implement the plan. As a result, most formal vocational education was provided within the state education system, and was systematically planned and standardized. The government rapidly expanded enrollment in vocational schools in the 1960s. However, the formal vocational schools were not able to train sufficient technical manpower for the rapidly industrializing country. In order to train enough workers to meet the increasing industrial demands, the government enacted the Vocational training law in 1967 as a result of which many new vocational training institutes were established.

During the 1970s, the government implemented a fundamental structural change within the heavy-chemicals industry. This rapid structural change heightened the industrial demand for skilled workers and craftsmen.

The government encouraged private companies to provide in-plant training with the enactment of the Basic law for vocational training in 1976. Large companies in certain industries were required to provide in-plant training for a certain number of their employees. These companies were obliged to pay a training levy if they did not provide in-plant training, or if their training did not meet government regulations. This mandate applied initially to firms with more than 500 employees; in 1991, this number was decreased to 150 employees, and in 1995 to 1000 employees in the manufacturing sector.

Such a compulsory in-plant training system, which was designed to concentrate on the basic training of new entrants to the labor market at the embryonic stage of industrial development, contributed to the provision of the necessary manpower and thereby sustained the rapid economic growth of Korea, but it did not meet the changing demands for industrial manpower. In addition, the law constrained enterprises from providing upgrade training to their employees.

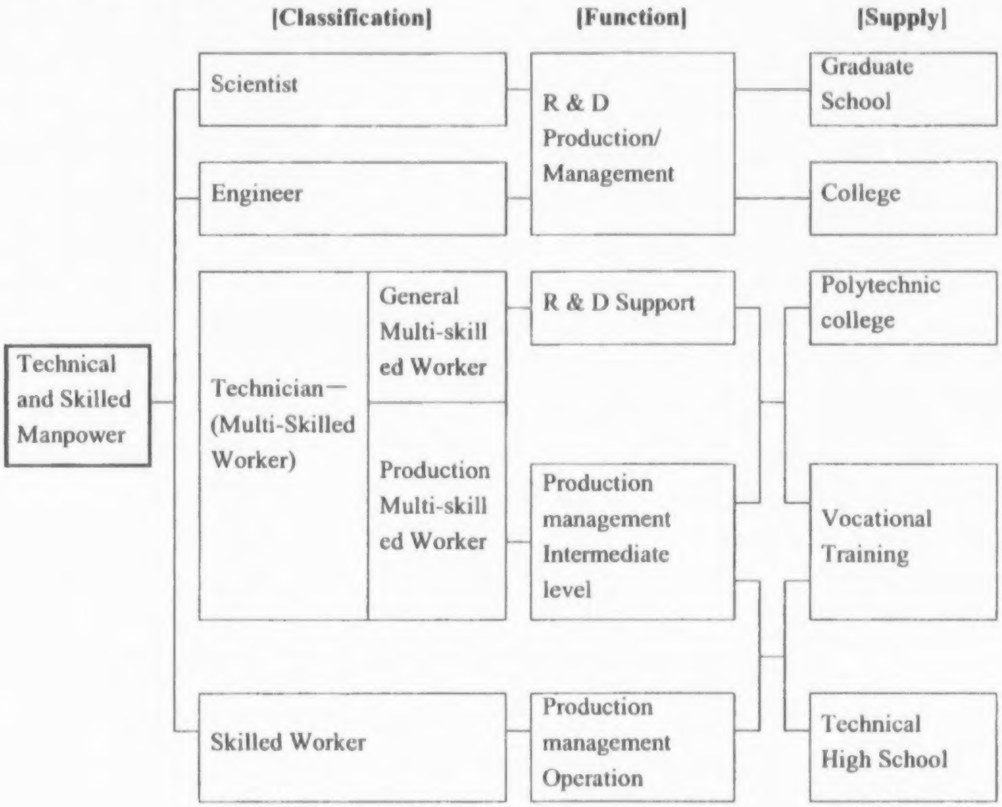
During the 1990s, voluntary training by companies increased greatly. At the same time the number of youths undertaking vocational training decreased markedly, due to the sheer reduction in the population ratio of the young and the increasing number of young people entering universities.

The government enacted the Act on Promoting Workers' Vocational Training in 1997 to establish a system for vocational competency development and to encourage enterprises to provide further training for the employed on a voluntary basis. The act has been in effect since January 1999. With the enforcement of the act, the Basic Vocational Training Act was abolished.

According to the act, the Minister of Labor provides financial support to employers who implement vocational competency development programs. The Minister also support employees who make an effort to develop their vocational competency, i.e., undertaking the vocational competency development training programs, wanting to acquire a certificate or undertaking programs designated in the Education Law. Governmental agencies or local autonomies may provide training for the unemployed.

The Ministry of Labor administers vocational training while vocational education is administered by the Ministry of Education and Human Resources Development. The supply system of technical and skilled manpower under the Ministry of Labor is shown in Figure 3.2.

Figure 3.2: Supply System of Skilled Manpower


[Classification]
[Function]
[Supply]
Scientist
Engineer
R & D Production/ Management
Graduate School
College
Technical and Skilled Manpower
Technician— (Multi-Skilled Worker)
General Multi-skilled Worker
Production Multi-skilled Worker
R & D Support
Polytechnic college
Production management Intermediate level
Vocational Training
Skilled Worker
Production management Operation
Technical High School

Source: Ministry of Labor (2001). *The Current Status of Vocational Training Programs*, p. 20.

2) Vocational training programs

The vocational training programs are classified into 'initial training', 'upgrade training', and 'job transfer training', depending on the curriculum, duration and trainee profiles. However, it does not make clear distinctions among the last two categories. In most cases, further training or in-service training is used to include both.

Initial training aims to train basic competencies that are required in the workplace and is intended for those newly seeking employment or prospective re–employment workers, such as high school graduates, former soldiers and the unemployed. This type of training lasts for at least one month. Programs of initial training should include (1) general education which is co-ordinated with practical training, (2) basic training in knowledge and skills common to related occupations which is given by a training institution or in an undertaking on or off the job, and (3) specialization in directly usable knowledge and skills for employability.

Upgrading training is provided for workers who have already completed initial training (or those who are deemed to already possess basic skills) and wish to acquire further skills. The duration of the training must be required longer than 20 hours.

Job transfer training aims to assist those who are seeking to transfer jobs or unemployed workers to develop new skills. The duration of the training program must be longer than two weeks.

Training methods are classified into three categories: institutional training, on-the-job training and on-line (web-based) training.

3) Funding system

The Employment Insurance System (EIS) was established in July 1995 as a comprehensive system intended to reduce the risk of unemployment, the risk of losing income as a result of unemployment and the risk of skill obsolescence. Consequently, the EIS comprises three components, namely employment security, vocational training and unemployment benefits.

At the time of its creation, the EIS covered mainly regular workers in enterprises with over 30 workers (over 70 workers in the case of the employment security and vocational training components). Since then, the coverage has been expanded considerably in terms of both enterprises and types of workers that fall under the scheme. In January 1998, the system was expanded to cover firms of more than ten workers; in March 1998 to firms of more than five workers; since October 1998, it affects workers of all enterprises irrespective of their size. There remain important exceptions, however, in particular, the following workers are not covered by the EIS.

- part-time working less than 18 hours a week or 80 hours a month

- daily workers who are employed less than one month
- government officials and employees subject to the private school teachers' pension act
- workers over age 65 and new employees over age 60.

Despite the recent strengthening of the system, only a relatively small proportion of the working population is insured. In 1999, there were 12.8 million paid workers, compared with a total of over 20 million employed individuals. This large gap is attributable to the fact that the system applies neither to the self-employed nor to unpaid family workers who make up a disproportionate share of the total employed. More importantly, only two-thirds of total paid workers are eligible under the EIS and only 71 per cent of those eligible are actually insured.

The EIS is funded by way of social contributions calculated as a proportion of the total wage. There exists three different contributions, one for each component of the EIS. The contribution rate to the employment security component of the EIS is 0.3 percent of the total wage. In the case of the vocational training component of the system, the contribution rate ranges from 0.1 per cent to 0.7 per cent of the total wage, depending on the size of the firm. A 1 per cent contribution rate has been set to finance the unemployment benefit component. While contributions to the employment security and training components of the EIS are borne by the employer only, half of the unemployment benefits contribution is paid by the employer and the other half by the employee. The three contributions together add up to a maximum of 2 per cent, but authorities can bring the total contribution rate to up to 3 per cent, depending on economic circumstances.

The vocational competency development scheme under EIS is not compulsory, but it is an incentive system to induce voluntary training by providing financial support to employers and employees from the EIS fund.

The new vocational training system under the Employment Insurance System embraces different types of schemes targeted at employed workers; namely, (1) subsidies to firms that conduct in-plant training; (2) subsidies to firms that assign workers on paid leave for education and training; (3) subsidies to firms for education and training courses that take place outside the firm premises; and (4) subsidies to employees for education and training, training for older workers and tuition loans.

The unemployed can be provided with various training activities they wish to undertake regardless of the eligibility for unemployment benefits. Needless to say, re-employment in secure jobs through opportunities to acquire appropriate skills should be preferred to the passive protection of unemployment benefits.

Support for employer

Should an employer establish training facilities and/or purchase equipment, he or she can apply for a loan or subsidy from the Employment Insurance Fund. With the intention of promoting training within small and medium–sized firms, the program aims to induce joint vocational training by groups and support their financing in order to harness the initiatives and ingenuity of the private sector to provide training programs which cater to the diverse and changing needs of firms. In providing these services, more emphasis is placed, stipulated by the law, on small and medium sized–firms.

There are two forms of financial support provided to firms for the financing of training: one is in the form of a subsidy for institutional, on-the-job, or on-line training as well as overseas and paid leave training costs and the other is in the form of loans for the building of vocational training facilities.

In the case of institutional training where the firm self-administers the training with in-house facilities or commissions the training to an external training institution, the training cost is calculated by multiplying the cost per hour (in the respective occupational field) by the actual training hours times the number of workers who completed the training.

Firms are also eligible to receive financial support for overseas training of their employees. Overseas training programs, typically three months in duration, should be designed to enhance productivity, upgrade the quality of products, and advance the skills of workers in general. Support is not given for accommodation costs and cannot exceed the amount specified for each occupational field.

In addition to institutional, on-the-job, on-line and overseas training costs, firms may receive loans for facility and equipment costs. It should be noted that not only firms, but states administering vocational education and training, organizations of firms, labor organizations, non-profit organizations, and households with working women are also eligible for loans to cover training facility and equipment costs.

Firms receiving support for vocational education and training costs can get up to 180 per cent (120 per cent in the case of conglomerates) of the insurance premium paid that year. However, if the firm administers standard training, then it may receive an additional 100 per cent of the insurance premium.

Support for training costs of workers

If a worker is 50 years old and over and insured under the EIS or is planning to transfer jobs, and has attended 80 per cent of a training course then he or she is eligible for full reimbursement (up to 1 million won) for costs associated with the training if paid by the worker him/herself. Upon receiving the subsidy, however, the worker may not take another training course for one year. If a worker attends a polytechnic college or other educational institution at the junior college level or higher with the purpose of vocational competency development, then he or she is eligible for long-term low-interest (1 per cent per annum) loans–up to 2 to 3 times for junior and polytechnic colleges and 4 times for universities. However, if the worker is already receiving financial support from a firm, university, or another third party, then these terms do not apply.

This type of support for incumbent workers is significant in the sense that the continued development of workers' skills is legally institutionalized. Should the occasion arise that the year's supply of Employment Insurance Fund is insufficient to cover the number of applicants for training subsidy, then preference is given to winners in vocational skills competitions, handicapped workers, and those with work experience in priority firms.

The number of persons completing initial training accounts for 5.3 per cent of all trainees completing craftsmanship training. Of persons who completed in-plant training in 1999, 98.8 per cent undertook further training while only 1.2 per cent underwent initial training. In-plant training concentrates on further training. Further training, expressed as 'vocational competency development' meaning the development and the improvement of vocational competency, is regulated by the Employment insurance act.

4) Training practices

Table 3.9: Proportion of people undertaking initial training and further training, 1990–99 (%)

	Total	Initial training		Subtotal	Upgrade T		Subtotal
		Public	Private		Public	private	
1990	44,852 (100.0)	45.4	29.8	75.2	0.7	24.1	24.8
1991	78,552 (100.0)	32.6	32.1	64.7	0.4	34.9	35.3
1992	132,608 (100.0)	17.6	30.9	48.5	2.1	49.4	51.5
1993	127,314 (100.0)	18.6	29.0	47.6	2.0	50.4	52.4
1994	159,979 (100.0)	2.0	44.0	46.0	5.2	48.8	54.0
1995	175,767 (100.0)	11.5	21.5	33.0	5.8	61.2	67.0
1996	170,427 (100.0)	10.2	19.5	29.7	11.3	59.0	70.3
1997	199,981 (100.0)	7.8	14.2	22.0	16.6	61.4	78.0
1998	750,137 (100.0)	4.0	5.5	9.5	14.7	75.8	90.5
1999	913,718 (100.0)	4.0	1.0	5.0	9.0	86.0	95.0

Source: Ministry of Labor 2000, The current status of vocational training programs, 1991–2000.

Public training

Depending on the type of training institute, vocational training in Korea assumes two forms: public and in-plant vocational training. Public training is undertaken by Human Resources Development Service of Korea (HRD Korea), the Korean Chamber of Commerce and Industry (KCCI), governmental agencies, local autonomies and the Korea Employment Promotion Agency for the Disabled (KEPAD). It aims to train semi-skilled and skilled workers in programs lasting from three months to two years. In-plant training is undertaken by firms.

HRD Korea, KCCI and KEPAD are concerned with trades that are commonly required by manufacturing industry (die-making and machine work), export-oriented trades (gem–cutting, dyeing and weaving etc.), and trades in advanced and new technology (CAM). Governmental agencies concern themselves with trades such as carpentry, bricklaying and electronic welding, aiming at training for the self-development of prisoners and incumbents, while local autonomies concern themselves with trades necessary for increasing the income of farm households.

In 1999 there were 95 public vocational training institutes of which 40 public vocational training institutes came under the jurisdiction of HRD Korea. Also included were 20 polytechnic colleges which were placed under the authority of the Korean Foundation for Polytechnic Colleges in December 1998.

Enterprise Training

If an employer chooses to train, there are three different ways of doing so: (1) independent training at his/her own in-plant training institute, (2) co–operative training with other employers, or (3) commissioned through a third party to undertake actual training on his or her behalf.

Korea suffers from an under-provision of enterprise training, particularly among small enterprises. The system of training for the employed, which exists under the EIS, has helped improve the situation somewhat, but major problems remain.

The rapid economic development recorded since the 1960s and a shortage of skilled workers prompted the government to set up a training levy system in 1976. Firms were required to provide in-plant training or to pay a levy. After some initial success, the proportion of firms opting for training their workers, rather than paying the levy, fell steadily from over two-thirds of eligible firms during 1977–80 to less than one-fifth during 1991–93. In 1995, a new training system was established as one component of the EIS.

Data on expenditure and number of participants for the year of 2000 show that, among the five programs, in-plant vocational training is the most important one (table 3.10). The programs are financed by way of employer contributions to the EIS. The EIS supports 40 to 90 per cent of the cost of the training and, additionally, in the case of the paid leave scheme, also one–third to one–half of the wage for courses that last over 30 days (Ministry of Labor 2001)

Table 3.10: Training programs for the employed: participation and expenditures, 2000

	Total	**In-plant vocational training**	**Paid training leave**
Number of firms providing training	86,692 (100)	73,411 (84.68)	309 (0.36)
Number of trained workers	1,246,932 (100)	1,220,334 (97.87)	7,756 (0.62)
Program expenditures (Million Won)	188,727 (100)	140,475 (77.43)	5,589 (2.96)
	Subsidies for course attendance	**Loans for school fees**	**Loans for facility of equipment**
Number of firms providing training	N.A.	12,960 (14.95)	12 (0.01)
Number of trained workers	252 (0.02)	18,590 (1.49)	N.A
Program expenditures (Million Won)	59 (0.3)	34,626 (18.35)	7,978 (4.23)

* The numbers of trainees in paid leave training and retraining for the unemployed include trainees carried forward from 2000.

Source: Ministry of Labor 2001, *Current status of vocational competency development program*, p. 44.

However, despite these encouraging results, it would appear that current training programs for the employed suffer from certain deficiencies.

Only a small proportion of the firms which pay contributions to the fund actually provide training for their workers. To take the example of in-plant training, which is the most common, during 2000 only 10.6 per cent of the insured firms provided in-plant training (table 11). During the same period, only 18.1 per cent of all insured workers received in-plant vocational training. The take-up of the other programs of training for the employed is even lower.

Furthermore, large firms are the main beneficiaries of the training programs for the employed. As shown in table 3.11, in 2000, the participation rate of firms with less than 150 workers in in-plant vocational training was negligible, while it came close to 1640 per cent in the case of firms with over 1000 workers. This high participation rate is explained by the fact that firms may claim support more than once over a given period of time. Only about 4 per cent of those employed in small firms received in-plant training, compared with 62.5 per cent in the case of large firms. Other programs of training for the employed are mainly used by large firms.

Table 3.11: Beneficiaries of in-plant vocational training programs, by firm size, 2000

Unit: %

	Firm size (number of workers)			
	Total	**Less than 150**	**150-1000**	**1000+**
Subsidized firms	100 (73,411)		17.4	5.4
Firms paying contributions	100 (693,414)	94.0	0.8	0.1
Firms' participation rate	10.6	8.7	233.3	1239.6
Subsidized workers	100 (1,220,334)	13.6	25.9	60.5
Insured workers	100 (6,747,263)	61.2	19.9	17.5
Workers' participation rate	18.1	4.0	23.5	62.5
Amount of subsidized	100 (180,749,711)	14.0	32.1	53.8

Note: Construction is dealt with separately given that special contribution rules, not based on firm size, apply to firms in this sector, but not shown in the table. In the section of firms paying contributions, construction contributed 5.1 per cent. And in the section of insured workers, construction accounted for 1. 4 per cent.

The number of workers trained has increased since the implementation of the new training policy under the EIS. In addition, most in-plant training schemes include 'advanced' courses, instead of basic training as tended to be the case under the levy system (table 3.12).

It would therefore appear that training under the EIS has not succeeded in increasing substantially training provided by small enterprises. As large firms would, in any event, tend to train workers in the absence of specific policies, it seems highly likely that the training subsidies yield large 'windfall' gains to large firms. Although the provision of training is likely to increase with the economic recovery, the system's effectiveness suffers from the excessive number of programs and the fact that training tends to be concentrated in large enterprises. As in other OECD countries, there is a risk that workers in small firms, once trained, are hired by either another small firm or a bigger one. This risk may be higher in Korea, given the unusually large gap in terms of wages and working conditions between large and small firms. Future policies may consider introducing special financial incentives to encourage training by small firms and some targeting of the programs for older workers, women and low-skilled workers.

Table 3.12: Recipients of in-plant vocational training, by program, 1999

Unit: % and 000won

	Initial Training		**Upgrade T**		**Job Transfer T**		**Total**	
	Trainees	**Cost**	**Trainees**	**Cost**	**Trainees**	**Cost**	**Trainees**	**Cost**
Total	1.2	5.1	98.8	94.3	0.06	0.6	100.0	100.0
Average	24.4	458.5	17.9	101.1	19.8	983.2	18.0	105.9

Source: Ministry of Labor (2000), *Current status of vocational training programs*.

Training for the unemployed

Training programs for the unemployed were considerably expanded during the 1998 IMF crisis. The main training programs available to the unemployed are:

- re-employment training of the unemployed, a program targeted to workers dismissed from enterprises covered by the EIS, irrespective of whether these workers are entitled to unemployment benefits or not
- training for employment promotion, which focuses on dismissed workers, not previously insured at the EIS, that is mostly temporary, daily and part-time workers
- training for unemployed new entrants into the labor market (most young unemployed have been granted internships under public work programs
- training for business start-ups, targeted at elderly unemployed, disabled individuals and school drop-outs.

Manpower development training, which comprises initial training for craftsmen and training for '3-D' jobs. Of these only the first program is set up under the EIS and therefore funded by the Employment Insurance Fund. The others are financed out of the general government budget.

Remarkably, a large number of unemployed workers have participated in these programs. In both 1998 and 1999, more than 350,000 unemployed attended a training course, accounting for roughly one–fifth of the unemployed in the period considered (see table 3.13).

However, most training programs for the unemployed appear to be insufficiently targeted at disadvantaged labor market groups. Moreover, they tend to suffer from relatively high drop-out rates, while re-employment probabilities of those who complete the courses are low.

Unemployed workers covered by the EIS are more likely to receive training than other unemployed individuals. About 63.2 per cent in 1999 were trained under the EIS program; that is, re-employment for the unemployed, even though unemployed workers covered by the EIS are a minority of the unemployed (table 3.14).

About 36.7 per cent of the unemployed who undertook training courses in 1999 completed them within the same year (table 3.14). An important reason for non-completion is dropping out of the course.

The re-employment rate also tends to be relatively low, except in the case of training for 3-D jobs (table 3.13). Job-finding rates are the lowest for training for business start-ups.

Data on the program of re-employment training for the unemployed suggest that older workers are relatively less likely to receive training than other unemployed workers. Table 3.14 shows that a majority of program participants are aged less than 29, while only 6 per cent are over 50.

Table 3.13: Outcomes of training programs for the unemployed, 2000

Type of training	1998	1999	2000
Total	330,644	358,361	216,317
Re-employment training	301,244	324,623	188,864
Re-employment training for the unemployed	170,096	226,356	120,296
Employment promotion training	106,835	69,466	47,057
Employment training	10,715	10,022	6,666
Training for promising job	-	11,054	10,146
Training for start ups	13,598	7,725	4,699
Human Resource Development Training	29,400	33,728	27,453
Pre-employment training for skilled worker	14,515	16,817	13,311
Training for 3D job workers	11,000	9,122	6,885
Paid leave	3,885	7,789	7,257

Source: Ministry of Labor (2001), *The Current Status of Vocational Training Program*, p. 20.

Table 3.14: Characteristics of participants in the program of re-employment training for the unemployed, 1999

	Participants		Average duration of the course (in months)	Average monthly training allowance
Total	130,946	(100.0)	5.1	99,747
Age				
Less than 25	18,754	(14.3)	5.8	91,736
25–29	51,069	(39.0)	5.2	94,875
30–39	38,374	(29.3)	4.9	108,401
40–49	14,890	(11.4)	4.7	104,178
More than 50	7,859	(6.0)	4.6	99,127
Gender				
Men	65,929	(50.3)	4.9	102,708
Women	65,017	(49.7)	5.4	96,744

South Africa

1. Education change and transformation: key strategic shifts 1994-2001

The demise of apartheid in 1994 was heralded nationally and internationally as a victory for democracy and human right. It offered unique opportunities – and responsibilities – to reconstruct a fragmented and deeply discriminatory education system, and establish a unified national system underpinned by democracy, equity, redress, transparency and participation. This social reconstruction had to be linked to economic development in the context of global economies and internationalization. The dual goals are captured in the Mission statement of the Department of Education(MOE):

> *vision is of a South Africa in which all people have equal access to lifelong education and training opportunities, which will contribute towards improving their quality of life and build a peaceful, prosperous and democratic society (DoE, 1996).*

For us, therefore, education is pivotal to economic prosperity, assisting South Africans – personally and collectively – to escape the "poverty trap" characterizing many of communities. It has also to reach beyond economic goals, enabling South Africans to improve the quality of their lives and contribute to a peaceful, concerned and democratic nation. And, education is now a basic human right, established in the Constitution (Section 29, 1996): "everyone has the right to basic education, including adult basic education" without discrimination of any sort.

In the first phase of education reform, the government placed much emphasis on developing legal and regulatory policy frameworks to facilitate change, including the establishment of organizations and institutions that created the conditions and structures for effective transformative actions.

1) Transforming the system during the first period: creating the framework(1994-1997)

During this period, the Ministry of Education confronted three inter-related tasks: dismantling apartheid structures and creating a unified education system, creating a more equitable system of financing in a context of huge demands on limited financial resources, and creating a policy framework which gave concrete expression to the values that underpinned the post-apartheid state.

2) Dismantling apartheid structures

The first five years of educational reconstruction focused on systemic reform geared to dismantling apartheid-created structures and procedures. Organizationally, this involved integrating formerly divided bureaucracies and transferring institutions, staff, offices, records, assets and more than ten million learners and teachers into a new system, without a breakdown in service delivery. The establishment of one national and nine provincial education departments, all new, was achieved mainly by new and old professional public servants, under the guidance of the Council of Education Ministers. The enormity of the task must not be underestimated. Provincial departments of education are much larger and more complex than the national department, and faced acute problems in their inherited organizational structures. A unified system had to be created across diverse racial and economic conditions, and large geographic areas, in a short space of time. The new Ministry had to undo more than 40 years of formal apartheid education structures and procedures in a matter of a few years. This was an important pre-condition for policy development and new and more effective modes of educational provision.

The Ministry had also to pay important attention to its own nature and role. Organizational cultures from nineteen racially and ethnically divided departments had to be blended and reshaped, to define and meet common goals. New civil servants and those who had been part of the old order had to come together to mould a public service with a new working culture.

Systems and procedures also had to be changed to improve performance and outcomes, teamwork and customer-focused service in the spirit of Batho-Pele, a strategy aimed to improve human capacity at different systemic levels. The Ministry established the Education Departments Support Unit (EDSU) within the national department, following on the Nicholo Provincial Review report in 1996. The EDSU was funded by the Policy Reserve Fund (PRF), a conditional grant mechanism for strengthening management and enhancing quality in provincial systems. The government initiated the District Development Project to develop new organizational models and to improve administrative and professional services at the district level, where the education system interfaces directly with learning sites. The Education Management and Governance Development (EMGD) program created an inter-provincial network to effort staff and governance development programs.

In these ways, the Ministry sought to create a quality, efficient, accountable and effective public service. This work is far from complete: it is not only about bringing people into a unified system, but also about the development of a shared vision, new values and attitudes, and the creation of capacity and an ethos that can drive achievement of organizational goals.

3) An equity-driven financing model of education

During this period, the Ministry established a more equitable basis for the financing of education (in particular, the extent and distribution of resources). In terms of the wider movement away from racial inequality, spending patterns were reoriented towards one budget, allocated on the basis of racial equity, and towards redress through funds made available from the Reconstruction and Development Program. Primary school nutrition and school renovation projects were key programs of the Reconstruction and Development Program (1995-1997), reflecting the Ministry's resolve to target social development.

Significant and detailed attention was paid to strengthening and streamlining provincial budgeting processes, reforming the budget process through the Medium Term Expenditure Framework (MTEF) of 1997, and establishing budgets that involved greater participation and realism. Key aspects were the provision of greater technical support to provinces from the national sphere, and the establishment of a budget based on greater institutional co-ordination rather than legislative prescription. Addressing the deep-rooted systemic and structural inequalities inherited from apartheid, and establishing a coherent redress and poverty targeting strategy continue to be an enormous challenge. Significant progress has been made, details of which are provided in Section 3, on budgetary frameworks and redress.

4) A policy framework for educational transformation

The energies of the Ministry of Education during the first period of democratic rule were applied to creating a sound legislative policy framework for educational transformation. Key policies and legislation in this phase included:

- The SA Constitution (1996) required that education be transformed and democratized in accordance with the values of human dignity, equality, human rights and freedom, non-racism and non-sexism. It guarantees access to a basic education for all through the provision that 'everyone has the right to basic education, including adult basic education,' The fundamental policy framework of the Ministry of Education, set out in the Ministry's first White Paper, Education and Training in a Democratic South Africa: First Steps to Develop a New System (February, 1995). This document took as its starting point the 1994 education policy framework of the African National Congress. After extensive consultation, negotiation and revision, it was approved by the Cabinet and has served as the principal reference point for subsequent policy and legislative development.
- The National Education Policy Act (NEPA) (1996), designed to inscribe in law the policy, legislative and monitoring responsibilities of the Minister of Education and to formalize the relations between national and provincial authorities. It established the Council of Education Ministers (CEM) and Heads of Education Departments Committee (HEDCOM) as inter-governmental forums to collaborate in building the new system, and provides for the determination of national policies in general and further education and training for among others, curriculum, assessment, language policy and quality assurance. NEPA embodies the principle of co-operative governance, elaborated in Schedule Three of the Constitution.
- The South African Schools Act (SASA) (1996), to promote access, quality and democratic governance in the schooling system. It ensures that all learners have the right of access to quality education with out discrimination, and makes schooling compulsory for children aged 7 to 14. It provides for two types of schools – independent schools and public schools. The Act's provision for democratic school governance through school governing bodies is now in place in public schools countrywide. The school funding norms outlined in SASA prioritize redress and target poverty in funding allocations to the public schooling system.
- The Further Education and Training Act (1998), Education White Paper 4 on Further Education and Training (1998) and the National Strategy for Further Education and Training (1999-2001), which provides the basis for developing a

nationally coordinated further education and training system, comprising of the senior secondary component of schooling and technical colleges. It requires that further education and training institutions, created in terms of the new legislation, develop institutional plans, and provides for programs-based funding and a national curriculum for learning and teaching.

- The Higher Education Act (1997), which makes provision for a unified and nationally planned system of higher education and creates a statutory Council on Higher Education (CHE) which provides advice to the Minister and is responsible for quality assurance and promotion. The Higher Education Act and Education White Paper 3 on Higher Education (1999) formed the basis for the transformation of the higher education sector through an institutional planning and budgeting framework. This culminated in the National Plan for Higher Education in 2001
- A range of legislation, including the Employment of Education Act (1998), to regulate the professional, moral and ethical responsibilities and competencies of teachers. The historically divided teaching force is now governed by one Act of parliament and one professional council – the South African Council of Educator (SACE).
- The Adult Basic Education and Training Act (2000), which provides for the establishment of public and private adult learning centers, funding for ABET provisioning, the governance of public centers, and quality assurance mechanisms for the sector.
- The South African Qualifications Authority (SAQA) Act (1995) that provides for the creation of the National Qualifications Framework (NQF), which establishes the scaffolding of a national learning system that integrates education and training at all levels. The NQF was an essential expression and guarantor of a national learning system where education and training are equally important and complementary facets of human competence. The joint launch on 23 April, 2001, by the Minister of Labor and the Minister of Education of the Human Resource Development Strategy reinforces the resolve to establish an integrated education, training and development strategy that will harness the potential of young and adult learners.
- Curriculum 2005 (C2005), which envisaged for general education a move away from a racist, apartheid, rote learning model of learning and teaching to a liberating, nation-building and learner centered outcomes-based one. In line with training strategies, the re-formulation is intended to allow greater mobility between different levels and institutional sites, and the integration of knowledge and skills

through "learning pathways". Its assessment, qualifications, competency, and skills-based frame work encourages the development of curriculum models aligned to the NQF in theory and practice.

Policy and legislation acted as levers for fundamental change in the first three years, as the indicators below illustrate:

- Access to primary and secondary schooling improved significantly, with near universal enrolment in primary schooling and 86% enrolment in secondary schooling by 1998. The net enrolment in secondary schools continues to be a concern.
- There was a considerable improvement in the qualifications of educators, with the proportion of under-qualified educators reduced from 36% in 1994 to 26% in 1998.
- Educators have been redistributed, through redeployment and post provisioning strategies, to areas of greatest need. This has led to vast improvements in establishing more equitable learner: educator ratios, from an average of 47:1 in 1994 to 35:1 in 2000.
- Per capita expenditure on learners showed significant convergence across provinces, and an overall increase from R2 222 in 1994 to R3 253 in 2000.
- Improvements in inter-provincial equity have been achieved utilizing the inter-governmental fiscal framework and the Equitable Shares Formula. Expenditure in the Eastern Cape and Northern Province – two of the poorest provinces – improved in 1997/98 by 49% and 36.9% respectively.
- Through the Reconstruction and Development Program, R1.4 billion was allocated for school construction and maintenance between 1995-1997. Much progress was made in school electrification, and increased water supply to schools.

The first five years of democratic government witnessed significant reform in education – establishing democratic governance and democratizing relations within and outside of the state, establishing sound systems at national and provincial levels to manage reform, review and strengthen resource allocation on the basis of redress and equity, take the discourse of education policy and reform into the public arena for debate and discussion, and transform learning by offering a curriculum that would shape future possibilities for education and training for the nation.

At the same time, important challenges were featuring on the agenda about the appropriate level for the financing of education, the impact of the macro-economic and fiscal policy on educational provision, the extent of state intervention required in educational change, the veracity of the vision of education and training offered through the NQF and Curriculum 2005, and the capacity for implementation throughout the system.

5) Transforming the system during the second period (1998-2000): from frameworks to action

By 1999, systemic transformation in terms of policy was in place, but the challenges of implementation remained, as mandated policy by itself does not lead to institutional change. With new systems of educational administration and governance largely established, the government turned attention to implementation and delivery. Several related elements needed to be examined:

- The social mandate of schooling – providing an education that contributed to learners' personal and social development – and the need to strengthen community and civil society participation in schooling were pressing issues. Racism, violence and other manifestations of anti-social values were deeply rooted in history and would not diminish without direct attention.
- A high turnover of personnel, particularly senior leadership, carried severe consequences. Equally pertinent were the highly variable capacities of individuals and teams at all levels of the system. The problem presented itself in two forms – the need for skilled and capable personnel, and the entrenched bureaucratic and hierarchical management practices inherited from apartheid traditions. These continue to be critical challenges.
- Improvements in the material conditions of education and the quality of education practice required serious attention. Large pockets of the education system continued to be non-functional. International experience indicates that systemic functionality is critical for implementation, and even then major pedagogical changes and improvements in a national system may take a decade or more to institutionalize. A clearly defined yet flexible implementation strategy was required.
- Disparity in incomes and high poverty levels continued to frame the reform agenda. The slowdown in the South African economy during the mid-1990s led to downward adjustments in expected growth. The lower growth rate projected by the November 1998 Medium Term Budget Policy Statement was largely a

> consequence of the global financial crisis, a slowdown in world trade, and financial disinvestment from emerging markets. Lower growth limits the availability of funds for social spending. One of the most complex challenges for South Africa as an emerging market negotiating the global economy continues to be the difficulty of the market to create employment, even in the context of an investor-friendly climate. Unemployment rates are highest amongst young people, with youth unemployment estimated at 53.9%. literacy and education levels remain high. The 1996 Census reveals that 19.3% of South Africans aged 20 years or more have no formal education and only 24% have some, or have completed primary education. This scenario, if allowed to perpetuate itself, makes it difficult to avoid the social alienation of youth.

The goals of the next phase of education reforms were set on 25 June 1999 by President Mbeki in his State of the Nation Address to Parliament. He noted the increasing urgency to produce an educated and skilled population. Describing education and training as the "decisive drivers" in efforts to build a wining nation, he also noted that it was necessary to mobilize civil society, and parents in particular. The President's emphasis on implementation and service delivery is the overriding theme for the government for the next five years, and one that the Education Ministry is giving priority.

In a sober assessment in 1999, the Ministry reported that, while the systemic changes brought about in the first five years provide a progressive and durable basis for improvements in the quality of learning, transformed learning opportunities were not yet accessible to the majority of poor people. "Inequality is still writ large in the education system, and too many families are on the receiving end of an unacceptably low standard of education delivery" (Status Report, 1999). The Ministry responded with an intensive period of consultation and review of the state of the education system, and reported:

> The public believes that the government have a crisis on hands. People have rights to education that the state is not upholding. They have put their confidence in the democratic process, and returned their government with an overwhelming mandate. After five years of democratic reconstruction and development, the people are entitled to a better education service and they must have it. (Minister Asmal, August, 1999)

The Minister acknowledged that South Africa had committed leaders and excellent policies and laws for the 21st century. At the same time, large parts of the system were seriously dysfunctional, rampant inequality existed, teacher morale was low, governance and management were yet to strengthen, and quality and learning outcomes were poor.

2. Innovation and change in education: laying the foundation of the post-apartheid education and training system

The transformation of teaching and learning across the nation requires an appropriate infrastructure. This section discusses two pillars of the system – establishing and strengthening of inter-governmental relations, and budgetary processes. These lie at the heart of equity, participation, and the Tirisano program, and are important expressions of collective commitment to education change.

Establishing the new inter-governmental systems

Legal Framework

The Constitution (1996) provided the framework for a unitary system of education, managed by the national Department of Education and nine provincial departments. (The exception is higher education, where the national department has sole responsibility.) The National Education Policy Act (1996) gives the Minister of Education the power to determine national norms and standards for educational planning, provision, governance, monitoring and evaluation. The principle of democratic decision-making must be exercised within the context of the overall policy goals. Consequently, provincial powers and those devolved by the provinces to regions, district and educational institutions must align with the goals of equity, redress, quality and democracy. In determining policy, the Minister must take into account the competence of provincial legislatures, and the relevant provisions of any provincial law relating to education.

The principle of co-operative governance (the term used in the Constitution) underpins provisions in education. Co-operative governance is a South African phenomenon arising from unique political settlement translated into the Constitution. Within an agreed national framework, provinces are given a significant degree of autonomy in educational provision. The establishment of decentralized governance at the provincial level has been one of the most complex areas of education transformation. Of particular concern has been the constrained ability of provinces to apply national norms based on principles of equity and redress because of organizational, financial and service delivery limitations. Since 1997 there have been calls – not only in education but also in all sectors –for national government to intervene in order to safeguard the overall project of transformation. From mid-1998, the national Department of Education indicated that it would actively intervene to safeguard key transformation initiatives, such as Curriculum 2005 and the provision of learning support materials. Moreover, it would review mechanisms to strengthen inter-governmental relations.

The Minister's statement of July 1999 on co-operative governance, which emphasized a greater degree of coordination and direction by the national sphere, was welcomed. It gives support for systemic reform through:

- The provision of technical support.
- Central funding for specific projects.
- Collaboration regarding provincial budgeting.
- Deployment of national officials for the purpose of monitoring.
- Support in provinces (particularly to review the implementation of national policies and legislation), and greater accountability through regular reporting.

Co-operative governance and stakeholder participation

One of the key commitments of the National Education Policy Act (1996) is the participation of stakeholders in policy development. The formulation of policies since 1994 has created structures and mechanisms for active stakeholder participation. For example, the National Commission on Higher Education (NCHE) and the Education Labor Relations Council (ELRC) demonstrate ways in which stakeholders can dialogue in developing policies. The creation of expert advisory bodies, such as the Council on Higher Education (CHE) and the South African Qualifications Authority (SAQA) are another.

At the institutional level, policy frameworks have been established for the creation of participatory structures in, for example, higher education institutions (institutional forums to facilitate the creation of legitimate and representative governing councils) and schools (school governing bodies). Such bodies have now been democratically established.

The government are mindful of the problems of capacity, genuine representation and effectiveness in stakeholder participation. Intensified and extensive training are necessary (which in turn require resources and support), as is time. One concern is the shortage of strong social movements in communities and civil society which could strengthen participation in governance. The Tirisano call for schools to be centers of community life is one response to this concern. More careful audits of what is occurring, and the effectiveness of co-operative governance in practice, will be undertaken.

Achieving equity in education provision

Education is one of the most significant long-term investments a country can make. It lays the foundation for a higher quality of life, greater employment opportunities and a better-skilled workforce. There has been a significant increase in education expenditure under the post-apartheid democratic government, from R31.8 billion in 1994 to R51.1 billion in 2000. At almost 6 percent of GDP, South Africa has one of the highest rates of government investment in education in the world. Yet education outcomes continue to lag behind those of other middle-income countries, reminding us of the enduring legacy of an apartheid education policy, and the need to strengthen and widen efforts to eliminate it.

Achieving equity objectives in education provision through restructuring education expenditure has been one of the main achievements of the post-apartheid period. The most direct implication of particular constitutional dispensation and education legislation is the decisive thrust to greater equity in all aspects of learning provision. In particular, the focus has been on achieving racial and gender equity in spending patterns, inter- and intra-provincial equity and increasing equity of access for those who are out of the formal education system.

Innovation and change in education: transforming learning and teaching

Lifelong learning

The pace of change in cities and villages around the world continues to accelerate as a result of globalization and technological innovation. The changes are dramatically altering the nature and management of work, social structures, values and cultures. Lifelong learning, for all citizens, becomes imperative. It is crucial additionally in South Africa because so many of people, young and old, were so long denied access to quality education and employment. The White Paper on Education and Training (DoE, 1995: 21) argues:

> *The overarching goal of policy must be to enable all individuals to value, have access to, and succeed in lifelong education and training of good quality... The Constitution guarantees equal access to basic education for all... It must provide an increasing range of learning possibilities, offering learners greater flexibility in choosing what, where, when, how and at what pace they learn. There must be special emphasis on the redress of educational inequalities among those sections of people who have suffered particular disadvantages, or who are especially vulnerable...*

In formulating education policies, the government envisaged a seamless system, encompassing early childhood development (ECD), general education and training (GET), adult education and training (ABET), further education and training (FET), and higher education (HE). The government sought this integration through a National Qualifications Framework (NQF). In October 1995, the South African Qualifications Authority Act was passed into law. The South African Qualifications Authority (SAQA), responsible for overseeing the establishment of the NQF, was established in 1996.

The NQF is bold in its vision and ambitious in scope. It seeks to bring together education and training, skills development and the needs of a critical democracy, personal, social and economic development. Historically, it drew from two significant movements: the People's Education Movement, with a focus on transforming general education, and the Congress of South African Trade Unions focusing on the reform of workplace and vocational education, and the Congress of South African Trade Unions focusing on the reform of workplace and vocation education and training. In fact these two traditions (general education and vocational education) do not come together easily. They have separate histories, different ways of thinking about education, and different approaches to curriculum structures and management. Nevertheless, the government succeeded in creating a framework for an integrated system of education and training.

The NQF provides for flexibility of delivery, portability of credentials and recognition of prior learning by promoting modular approaches, expressed through 'unit standards' and registered programs. To support integration of the various components into a single system, all components, from Early Childhood Development to Higher Education, including workplace and vocational education, employ outcomes-based approaches. A single set of 'critical and developmental outcomes' overarches all program development. The critical outcomes emphasize the competencies necessary to a vibrant democracy and to economic development, including problem solving, critical thinking, working in teams, communicating, and using science and technology. Curriculum design, in all unit standards and in all learning programs, must express the critical outcomes, and articulate them with specific outcomes, knowledge and skills in defined 'fields of learning' or 'learning areas'.

Innovation and change in education: building a nationally coordinated and planned higher education system

Policy goals and process in the post-1994 period

Higher education has a critical role to play in the transformation of post-apartheid South Africa. It must provide the range and quality of graduates and knowledge required to drive national reconstruction and development in a rapidly globalizing world. It must also help to consolidate new democracy through developing critical citizenship.

The system of higher education inherited by the democratic government in 1994 was highly unequal, fragmented and largely dysfunctional in meeting the development priorities of the nation as a whole. Consequently, the challenge facing the new government was to create a policy framework and an implementation plan for the fundamental systemic restructuring of higher education. Three distinct phases in the period since 1994 can be distinguished: first, the initial focus on macro-policy formation, in which the policy and the regulatory framework for this systemic restructuring was elaborated by 1997; second, the phase of developing the planning framework, including the development of a new budgetary framework; and third, the incremental implementation of the planning framework at the national and institutional levels which is taking place now.

The immediate tasks of the post-1994 phase were: to establish a consultative process by which the new policy framework for the transformation of higher education could be developed; to promulgate the required legislation to guide this transformation; and to strengthen the bureaucracy and statutory organs to manage the process and to attend to emerging priorities.

The first involved the establishment of the National Commission on Higher Education (NCHE), which was mandated to provide comprehensive recommendations for a new higher education policy framework. Following broad consultation, its 1996 report, A Framework for Transformation, set out a new vision for higher education, identifying the principles, goals and features by which transformation should occur. In late 1997, Education White Paper 3: A Program for the Transformation of Higher Education was published, followed by the Higher Education Act (No. 101).

The framework for higher education transformation was shaped by two sets of conditions. First, South Africa is a middle-income developing country, characterized by a highly stratified race and class structure and great disparity between rich and poor. Second, its democratic transformation and its simultaneous re-entry into the international arena occurred during the period of the intensifying globalization of social, cultural and economic relations in the 1990s. As a result, dual national development challenges are to address the basic needs of the majority and to build capacity to engage competitively in the global economic arena and the new knowledge society.

To these ends, the White Paper sets out the following policy goals:

- The development of a single, national, integrated, planned and coordinated system, funded on a program basis;
- Increased and broadened participation in higher education, thereby simultaneously meeting person power needs and advancing social equity;
- Cooperative governance between government and institution and within institutions, based on the democratization and restructuring of governance structures;
- Responsiveness to societal needs through curriculum restructuring and relevant knowledge production;
- Quality assurance through the promotion and assessment of quality and the accreditation of programs;
- Promoting articulation, mobility and transferability across the education and training system by incorporating higher education qualifications into the National Qualifications Framework.

The White Paper indicates that, as part of the broader transformation of South African society, the reconstruction of higher education will be guided according to the principles of equity and redress, democratization, development, quality, effectiveness and efficiency, academic freedom, institutional autonomy, and public accountability.

To ground these principles, the key mechanism proposed in the White Paper is a process of national and institutional three-year rolling plans based on programs, linked to a revised, goal-oriented state funding framework and to quality assurance. Required institutional plans will include a statement of mission and vision, indicative enrolment targets in various fields of studies and qualifications levels, and a series of plans: for equity and staff development, for quality improvement, for research and infrastructure development. Institutions will therefore be challenged to identify niche areas of concentration in terms of which their mission and purpose can be identified or redefined, taking cognisance of other national and regional offerings.

Having established the policy and legislative framework for transformation, the next task in the post-1994 period was to strengthen the bureaucracy and to establish the required statutory structures. This was achieved by creating the Higher Education Branch in the Department of Education and by appointing the Council on Higher Education (CHE) in 1998, which is responsible for advising the Minister on all aspects of higher education. In addition, it holds executive responsibility for quality assurance through its permanent sub-committee, the Higher Education Quality Committee (HEQC).

3. Education System

Schools were classified as follows for purposes of comparison.

(These classifications are not binding and only serve to highlight provincial variations.):

- Primary schools are schools with a highest grade of between 1 and 7. They may offer pre-primary grades.
- Secondary schools are schools where the lowest grade is between 8 and 12.
- Combined schools are schools that offer any number of primary grades and secondary grades up to Grade 10, 11 or 12.
- Intermediate and middle schools in North West are schools that offer Grades 7 to 9.

Figure 3.3: Structure for an NQF

NQF Level Band		Types of Qualifications and Certificates	
8	Higher Education and Training Band	Doctorates, Further Research Degrees	
7		Higher Degrees, Professional Qualifications	
6		First Degrees, Higher Diplomas	
5		Diplomas, Occupational Certificates	
Further Education and Training Certificates			
4	Further Education and Training Band	School/College/Training Certificates Mix of units from all (NGOs)	
3		School/College/Training Certificates Mix of units from all (NGOs)	
2		School/College/Training Certificates Mix of units from all (NGOs)	
1 = General Education and Training Certificates = 4			
	General Education and Training Band	Senior Phase	ABET Level 4
			ABET Level 3
		Intermediate Phase	
			ABET Level 2
		Foundation Phase	
			ABET Level 1
		Pre-school	

In 1999, 32,178 educational institutions were registered with the Department of Education in South Africa, namely 27,461 ordinary schools and 4,717 other education institutions, as follows.

27,461 institutions were ordinary schools with 365,447 educators and 12,362,277 learners. These ordinary schools were made up of:

- 26,644 ordinary public schools with 351, 158 educators and 12,138,032 learners

BEST COPY AVAILABLE

- 817 ordinary independent schools with 14,289 educators and 224 245 learners

The 27,461 institutions were also made up of:
- 17,254 primary schools with 187,245 educators and 6,550,920 learners
- 5,673 secondary schools, with 116,614 educators and 3,731,838 learners
- 4,534 combined, intermediate and middle schools with 61,588 educators and 2,079,519

4,717 institutions in other education sectors with 52,119 educators and 1,397,454 learners. These other institutions were made up of:
- 2,226 ABET centers with 16,089 educators and 294,566 learners
- 353 ELSEN centers with 5,727 educators and 71,177 learners
- 81 colleges of education with 3,962 educators and 85,985 learners
- 1,868 pre-primary/ECD centers with 5,525 educators and 531,085 learners

In 1999 there were 27,461 ordinary public and independent schools (hereafter together referred to as ordinary schools) in South Africa. Ordinary schools are the so-called mainstream schools and exclude stand-alone ELSEN/special schools and pre-primary/ECD schools and centers. Just over 97% (26,644) of these ordinary schools were public schools and less than 3%(817) were independent schools. The Eastern Cape had the largest number of ordinary schools (6,190), while the Northern Cape had the smallest number of ordinary schools (493).

Ordinary public schools

The Eastern Cape had the highest number of ordinary public schools (6,145), while the Northern Cape had the smallest number (475). The Eastern Cape (6,145), KwaZulu-Natal (5,578) and the Northern Province (4,035) together contained almost 60% of all ordinary schools in South Africa.
Ordinary independent schools

Gauteng and the highest number of ordinary independent schools (314), while the Northern Cape had the smallest number (18). Gauteng (314), KwaJulu-Natal (138) and the Western Cape (128) together contained over 70% of the total number of ordinary independent schools in the country.

Learners

In 1999, there were 12,313,899 learners at ordinary schools in South Africa. Over 56% of these learners were concentrated in three largely rural provinces (Northern Province, the Eastern Cape and KwaJulu-Natal). Approximately one in every three people in South Africa is in the school system.

Educators

In 1999, there were 365,447 educators teaching 12,313,899 learners in ordinary schools in South Africa. KwaJulu-Natal (74,719) had the highest number of educators in ordinary schools, while the Northern Cape (6,773) had the lowest.

Table 3.15: Education in South Africa a global picture - 1999

		Learners	Educators	Institutions
Ordinary Public Schools[1)]	Primary[3)]	6,489,381	182,985	16,972
	Secondary	3,691,132	113,376	5,522
	Combined,	1,808,380	49,601	3,762
	Intermediate & middle	149,139	5,196	388
	Total(Public)	12,138,032	351,158	26,644
Ordinary Independent Schools[2)]	Primary[3)]	61,539	4,260	282
	Secondary	40,706	3,238	151
	Combined,	120,420	6,727	379
	Intermediate & middle	1,580	64	5
	Total(Independent)	224,245	14,289	817
	Total(Public and Independent) [4)]	12,362,277	365,447	27,461
Other Educational Institutions/Centers	ABET	294,566	16,089	2,226
	ELSEN	71,177	5,727	353
	Colleges of Education	85,985	3,962	81
	Technical Colleges	271,900	7,038	153
	Pre-primary/ECD	142,741	5,525	1,868
	HE	531,085	14,480	36
	Total(Other*)*	1,397,454	52,821	4,717

Grand Total	13,759,731	418,268	32,178

Source: 1. Ordinary public and independent schools: Western Cape – 1999 Annual Survey. Other provinces – 1999 SNAP Survey (conducted on the 10th school day).

2. Technical colleges: preliminary findings of the National Business Initiative Quantitative Survey 1999.

3. AABET: 1999 ABET Audit.

4. ELSEN, colleges of education, technical colleges and pre-primary/ECD centers: provinces used different sources.

5. HE: SAPSE database from the Department of Education.

1) Including ELSEN at ordinary public schools.
2) Including ELSEN at ordinary independent schools
3) Including learners in pre-primary classes at primary schools.
4) Total (public and independent) in this table does not, for most provinces, tally with previous tables due to unstandardized differences among different school types across provinces.

Early Childhood Development (ECD)

Prior to 1994 the Early Childhood Development sector was badly neglected, except for the rich. Non-governmental agencies provided some training, particularly for poor Black women in an attempt to ensure some quality provisioning for the ever-increasing number of ECD sites in poor communities. These sites and the teachers working in them were not recognized or supported by the authorities, and no investment was made to ensure that minimum standards were being met. This situation prevailed despite the overwhelming international evidence that pre-school development is a key factor in success at school, and later, in life.

The Education for All assessment of 2000 records that only about 560,000 of the approximately 6 million children under the age of 6 are accommodated in pre-school facilities, while an audit conducted by the DoE in 2000 showed there were in fact over 1 million learners under age 6 at some form of pre-school institution. It is estimated that at least 50% of the age cohort (5 turning 6) are enrolled in ECD facilities (440,000 learners), and a target of 1 million learners of this age has been set for increased participation over the next three years. Particular attention will be given to the participation of children from the poorest 40% of the nation.

The low rate of participation is compounded by the fact that some of these ECD sites are of dubious physical and educational quality, and serve as no more than "creches", with little or no structured development programs. A register of sites is being compiled by the Department of Education, with over 25,000 entries to date.

In response to this situation, the ECD Pilot Project began in 1997, and was designed to test out a different way of offering children an extra year of education – the Reception Year. Interim ECD Policy and curriculum framework guidelines were developed, and agencies were contracted in each of the provinces to provide educational and management training for ECD practitioners in line with the policy and framework. A further objective of the Pilot project was to align ECD with the National Qualifications Framework, and the establishment of a career path for ECD practitioners. To date, a total of 2 700 practitioners have been trained and 40 training agencies accredited by the Interim Accreditation Committee.

The Pilot Project ended in March 2000. A Standards Generating Body (SGB) for ECD was registered in 2000, and the draft qualification framework that was developed for the National Pilot Project was handed to the SGB. The South African Qualifications Authority (SAQA) has registered this ECD unit-standard based qualification, and qualifications have been developed at Levels 1, 4 and 5 on the National Qualifications Framework.

A conditional grant has been awarded to the Department of Education to extend services to the ECD sector and ensure the further development of practitioners. It is anticipated that at the end of the 3-year period a total of 4 500 practitioners would have obtained at least the Level 4 qualification. This grant will also be used to train district officials to ensure that there is an effective and efficient monitoring system in place for community-based ECD sites.

Formal education in South Africa is presently reaching the vast majority of children between the ages of seven to fifteen years. But actual educational attainment among school-goers (as well as adults) tends to be rather low. Children seem to be struggling to complete both primary and secondary school. Relatively few people attend tertiary educational Institutions.

School attendance

Table 3.16: Total number of learners in ordinary public and independent schools per grade compared with the appropriate age group in the population, 1999

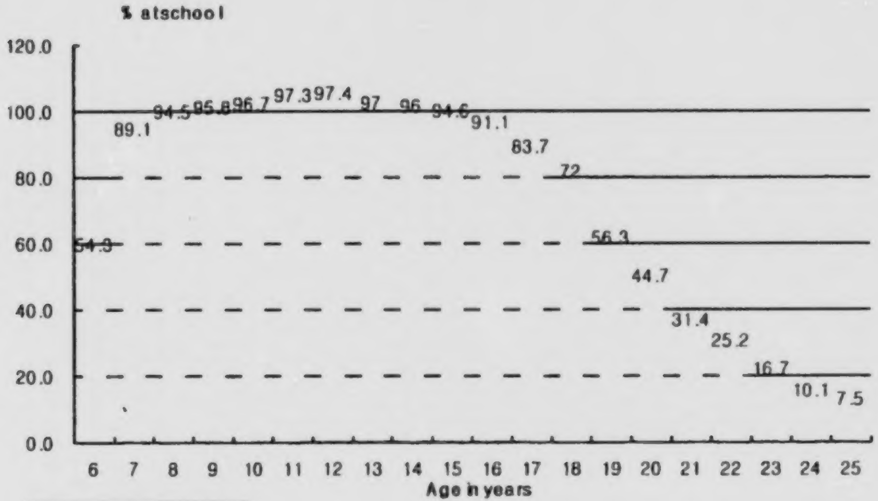
	Learners	Population
GR 1	1,318,932	1,077,047
GR 2	1,223,529	1,083,934
GR 3	1,194,425	1,085,187
GR 4	1,167,683	1,080,674
GR 5	1,087,829	1,069,314
GR 6	998,705	1,049,621
GR 7	937,741	1,021,258
GR 8	1,043,067	987,279
GR 9	917,239	946,401
GR 10	840,803	907,003
GR 11	738,220	880,954
GR 12	571,848	874,247

Source: Population estimates for 1999, Statistics South Africa.

Approximately 14,0 million people, across all age categories, were attending schools in South Africa in 1999. Figure 3.4 shows that the vast majority of those aged 7 to 15 years (compulsory school-going age) was indeed attending school in 1999.

However, children, teenagers and young adults tend to continue with their school education way beyond the age of 16 or 17 years. For example, 44.7% of those aged 20 years in 1999 were still at schools. This reflects, among other things, relatively high repetition rates.

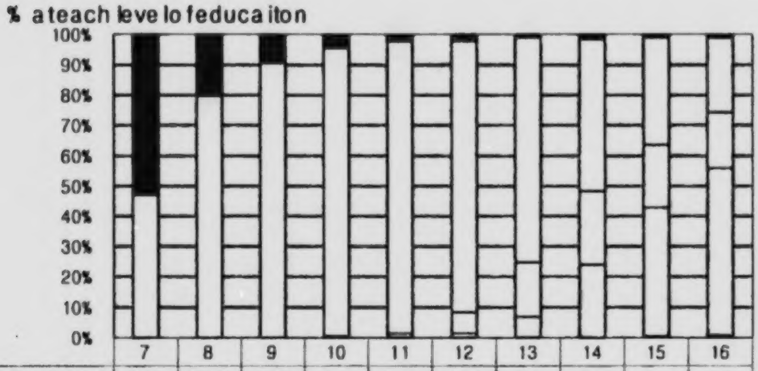
Figure 3.4: Percentage of those aged 6-25 years who were attending school in October 1999, in single-year age categories



Source: OHS 1999
Escluding unspecified

Although school attendance in the country is relatively high, South African children seem to progress through school rather slowly. Figure 3.5 indicates that a large proportion of children aged 13 (74,0%), 14 (50,0%), 15 (35,4%) and 16 (24,6%) years who have begun their formal schooling have not completed primary school. Only 42,6% of those aged 15 years and 55,1% of those aged 16 years had at least some secondary school education.

Figure 3.5: Highest level of education by age among children aged 7-16 years, October 1999



	7	8	9	10	11	12	13	14	15	16
■ None/Grade0	52.9	20.2	9.5	4.4	2.2	2.2	1.1	1.6	1.1	1.1
□ Some prim.	47.1	79.8	90.5	95	96.2	89.2	74	50	35.4	24.6
□ Complete prim.				0.6	1.1	7	18	24.1	20.7	18.4
■ Some sec.					0.4	1.4	6.9	24.2	42.6	55.1
□ Matric									0.3	0.8

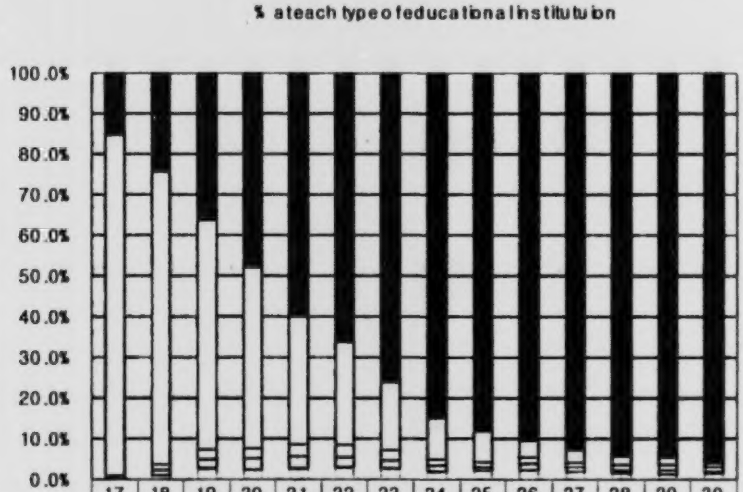
Age in years

Source: OHS 1999
Excluding unspecified

Young South Africans tend to stay at school way beyond the compulsory school-going age. For example, figure 3.6 indicates that:

- Among those aged 17 years, 83,7% were still at school, decreasing slowly to 31,4% of those aged 21 years and to 10,1% among those aged 24 years.
- The proportion of those attending a university or technikon among those aged 18 to 30 years is, however, relatively low. For example, among those aged 22 years, 3,0% were attending university, 2,5% a technikon, and 2,9% other educational institutions such as a college.

Figure 3.6: Type of educational institution, if any, that those aged 17-30 years are attending, in single year age categories, October 1999



	17	18	19	20	21	22	23	24	25	26	27	28	29	30
■None	15.3	24.3	36.3	47.8	60	66.3	76.1	85	88.4	90.5	92.7	94.3	94.5	96.1
☐School	83.7	72	56.3	44.7	31.4	25.2	16.7	10.1	7.5	4.2	3.1	2.1	1.9	0.8
☐University	0.3	1.3	2.4	2.4	2.9	3	2.6	1.4	1.1	1.5	1.1	1.4	1.4	1.4
■Technikon	0.3	1.4	2.2	2.9	3	2.5	1.9	1.6	0.8	1.6	1.1	0.6	0.9	0.2
☐Other	0.3	0.9	2.7	2.3	2.7	2.9	2.7	1.9	2.3	2.3	1.9	1.6	1.3	1.6

Source: OHS 1999
Excluding unspecified

Age in years

Adult Basic Education and Training (ABET) and Literacy programs

Illiteracy is very prevalent in South Africa, particularly among older persons who were marginalized from educational opportunities under the apartheid system. Three million South Africans cannot read or write at all, and millions more are semi-literate. This can have devastating negative consequences on their ability to participate fully in the political, economic and social spheres of life. About 67% of persons aged 15 years and above and 83% of those aged 15-24 have completed Grade 6 and are considered to be functionally literate. Comparative literacy rates are: USA, UK and Australia, all at 99%; Malaysia, 86.4%; Zimbabwe, 87.2%; Nigeria, 61.1%; India, 55.7%; and Mozambique, 42.3%.

The SA National Literacy Initiative (SANLI) has been established by the Department of Education, and aims to mobilize three million participants into literacy programs. The initiative also seeks to mobilize the support of business, local government, NGO's and volunteers in tackling the issue of illiteracy.

The need for adult education is equally acute. A high proportion of South African adults aged 20 years and older have never been to school – 19.3% overall, but peaking at 36.9% in the Northern Province and going as low as 6.7% in Gauteng. Regional strategies to encourage participation in lifelong learning, and proportional to the disparities in participation rates, will need to be developed.

Universal general education (9 years)

Universal primary education in South Africa has increased sharply in the last five years, with near universal enrolment 93%. The national net enrolment ratio (NER) was 87% and the gross enrolment ratio (GER) 112% in 1997. The NER measures the extent of participation of the official primary age cohort (7-13 years of age) in primary schooling, and therefore excludes those learners who are formally too young or too old to sit in primary school classrooms – but who do. The GER is a measure of participation regardless of age and a GER that is above 100% has high numbers of under – as well as over-age pupils. This is attributed to high repeater rates (estimated at 17% in South Africa). There has been a decrease in GER between 1997(112) and 1999 (106), meaning that there are less children of inappropriate age within the schooling system. This is an indication of an improvement in the efficiency of the system.

The level of non-school attendance by eligible children is another measure of access to basic education. Currently, approximately 16% of children between 6 and 14 years of age are out-of-school – which varies by place of residence, population group and gender. For example, the measure of African out-of school youth is 17.3%, whereas for white youth the measure is 9.3%.

Examination pass rates

At present, the key indicator of school success is the matriculation examination that takes place at the end of Grade 12. This will change with the introduction of the General Education and Training Certificate (GETC) at the end of Grade 9 and which will become a benchmark for improvement. 2001 will also see the introduction of a systemic evaluation at Grade 3 level, with 5% of learners in the cohort being appraised in language and numeracy skills. This systemic evaluation will be extended to Grade 6 as well, which will also provide an indication of progress.

Until 2000, there had been a decline in both the number of students enrolled to write the matriculation exam and in the pass rates, although the pass and exemption rates improved dramatically in 2000, as table 1 indicates.

Table 3.17: Matriculation enrolments and pass rates

Year	Candidates who wrote	Candidates who passed		Pass with exemption		Pass without exemption	Candidates who failed
		No	%	No	%		
1996	518,225	279,487	54.4	80,015	15.6	199,472	234,381
1997	559,233	264,795	47.4	70,127	12.5	194,668	294,175
1998	552,862	272,488	49.3	69,856	12.6	202,632	279,896
1999	511,474	249,831	48.9	63,725	12.5	186,106	261,328
2000	489,941	283,294	57.8	68,626	14.0	214,668	283,294

Table 3.17 shows poor throughput in the system – from the initial 489,941 learners who enroll to write the exam, through to the 68,626 (14%) candidates who passed with exemptions – a key pre-requisite for entry into higher lever professional training.

The transition from school to work is made extremely difficult by these matriculation results. A number of 'transition' problems in the youth labor market are created:

- Of 489,941 candidates only 68,626 are considered "successful" because they are now eligible for entry into higher learning.
- Inefficient through-flow from matric: Of the 70,127 matriculants who received exemption in 1998, only 43,000 (61%) entered higher education institutions in 1998 as first time entering students in the year immediately after matriculation. There is no data on where the remaining 39% of the 1997 matric cohort went. Many young people take a few years before re-entering the education system at higher levels – because of poverty (for the poor) or in pursuit of leisure (for the middle classes). Table 3.18 provides the details of this through-flow.

Table 3.18: Throughput rates from school to HET in 1995-1998

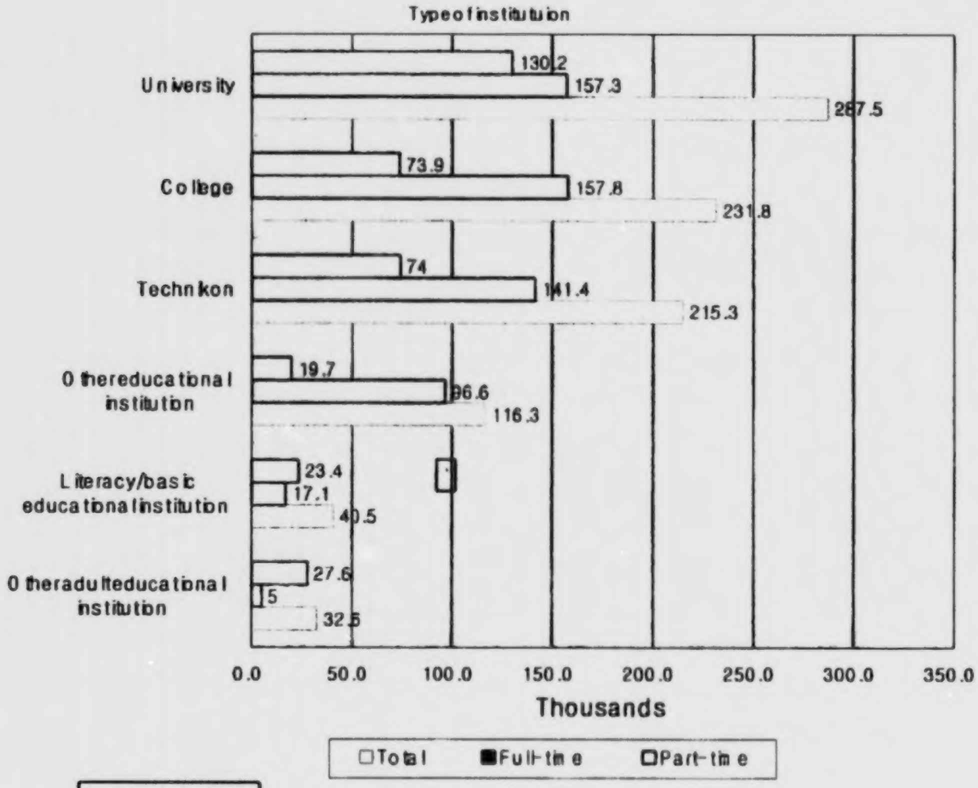
	1995	1997	1998
Universities 1st time(std 10 previous year)	31,000	23,000	22,000
Technikons 1st time(std 10 previous year)	15,000	23,000	21,000
Total	46,000	46,000	43,000
Total pass with exemptions	1994 88,000	1996 80,000	1997 70,000
Throughput rate(%)	52.0	57.5	61.4

- Inefficient through-flow of all the potential adult learners: the first-time total intake at HET institutions is roughly estimated at being 120,000 students per annum – 84 000 in the contact institutions and 36,000 in the two distance institutions. Approximately 87,000 come from specific learner constituencies: those who obtained a matric exemption in previous years but did not enter HET immediately after Grade 12; mature age students who do not need exemption (those older than 24) and part-time adult learners who are studying after work in distance institutions. This component of the labor market – the working adult, post-school potential learner constituency – is currently an unknown. Few effective strategies are in place to entice these adults into further learning. Rectifying this problem is a major priority of a future HRD strategy.
- The most devastating impact of the matric system is that approximately 250,000 students annually are considered failures because they failed to pass matric, even though they have passed 11 years of previous schooling. The labor market currently places no value on these learning achievements. It is estimated that only 21% of African youths have completed matric, and that 6% go onto higher education.

Higher education in South Africa

In general, in October 1999, the overall number of people attending formal educational institutions in South Africa, excluding schools, tended to be rather low. Figure 3.7 shows that, altogether, about 288,000 people were at universities, 232,000 were at a college and 215,000 were at a technikon at that time.

Figure 3.7: Number of people attending educational institutions other than schools, either part-time or full-time, October 1999

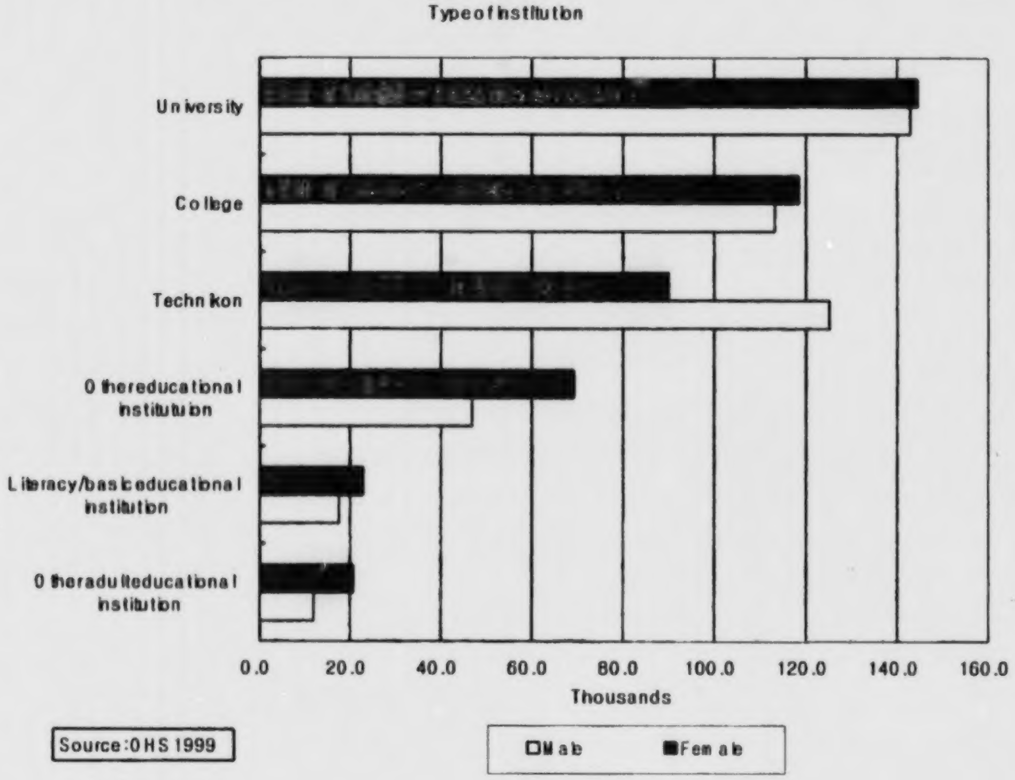


Source:OHS 1999

The number of male and female students attending educational institutions varied by type of institution. For example, taking sampling error into account, figure 3.8 shows that there were almost equal numbers of women and men at universities (143,000 men and 145,000 women) and colleges (113,000 men as against 119,000 women) according to the OHS 1999 findings. But in technikons, the number of men (125,000) exceeded the number of women (90,000).

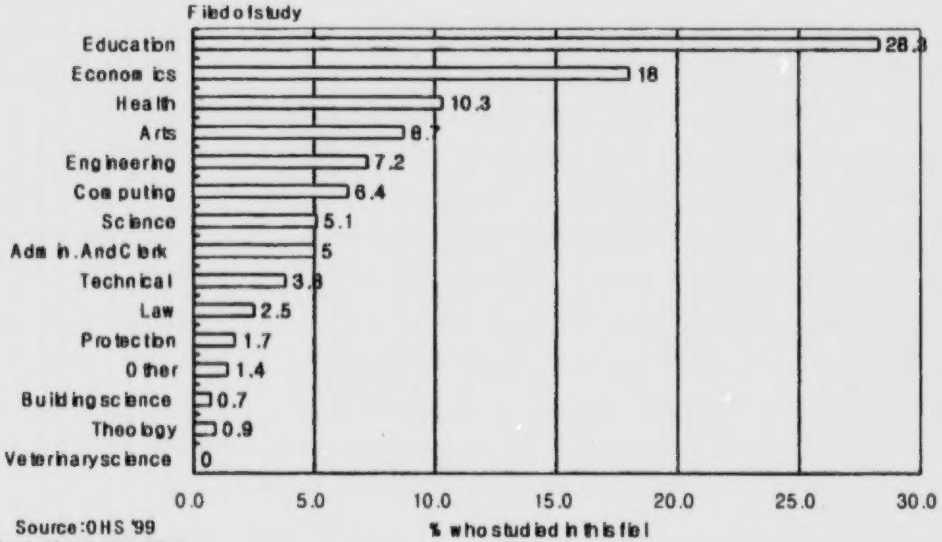
BEST COPY AVAILABLE

Figures 3.8: Number of people attending educational institutions other than schools by sex, October 1999



To discuss fields of study, Stats SA makes use of the first-level structure of the South African Qualifications Authority (SAQA). Amongst the people who had attained formal post-school qualifications at the time of OHS 1999, Figure 3.9 indicates that the most common field of study was education (28,3% of all those in formal non-school organizations), followed by economics (18,0%) and then health (10,3%)

Figure 3.9: Field of study among those who had formal post-school qualifications, October 1999



Source: OHS '99
Excluding unspecified

Adult participation in FET and HET

The overall net participation rate in the Technical College sector in 1998 is 1.13%. This compares poorly with the participation rates for other countries. For example, the rate in Australia in 1998 was 3.88%. the majority of learners in the South African technical colleges are youth, with 96% being in the age group 15-35 years and 73% in the age group 15-24 years old. The technical colleges currently do not cater for the lifelong learning needs of adult working people. This is apparent in table 4.

BEST COPY AVAILABLE

Table 3.19: Age distribution of total enrolment of South African and Australian technical college learners, 1998

Age cohort	South Africa (%)	Australia
< 15	0.1	0.5
15 – 19	34.0	21.0
20 – 24	40.0	17.0
25 – 29	19.0	13.0
30 – 34	8.0	22.0
40 +	0.0	27.0

The South African enrolment in technical colleges thins out after the age group 25-29 years of age, whereas the Australian enrolment picks up again at this age with 30-34 year cohort increasing to 22% and the 40+ cohort constituting 27% of total enrolment in Australian TAFE colleges. There is clearly no practice of lifelong learning in the South African post-school technical colleges. They function as an adjunct to the school system and service very young post-school youth only. Other learner constituencies such as the working adult population and unemployed persons who require skills upgrading and retooling are not catered for.

These practices are also evident in the HET sector. Table 3.20 highlight the age profile of the total first-time enrolment of university and technikon students – the bulk are in the 18-34 (youth) category. Enrolment then dips to a very low level in the 35+ age category. This shows that few older working students are coming back to the HET sector to update their skills. The South African post-school Education and Training system has not modernized and massified to the extent of other systems in the world, which have adapted significantly to the needs of adult and continuing education.

Table 3.20: Enrolments in technikons and universities combined 1998

Age groups	M	F	T
Under 18	1,337	2,448	3,785
18	9,487	12,464	21,951
19-20	13,659	14,113	27,772
21-22	6,329	6,118	12,447
23-24	4,336	4,246	8,582
25-29	5,904	6,015	11,919
30-34	3,331	3,650	6,981
35-39	2,005	2,624	4,629
40-44	1,040	1,450	2,490
45-49	475	677	1,152
50-54	139	247	386
55-59	48	87	135
60-64	12	20	32
65	21	13	34
Unknown	266	577	843
Total	48,389	54,749	103,138

Improving HET participation rates

The National Commission on Higher Education (NCHE) in 1996 projected that the higher education participation rate (that is, the proportion of 20-24 year olds enrolled in the HET system) would expand from 20% in 1996 to 30% by 2005. In headcount terms, this would have meant a doubling from just under 600,000 enrolments to 1.5 million in 2005. This is however not occurring. On the contrary, the participation rate has decreased from 17% to 15% by 2000. Explanations of this declining participation rate include:

- The rapid rate of growth in enrolments in the early 1990s (25% growth between 1993 and 1996) began to level off by the late 1990s (3% growth between 1999 and 1998).
- The significant decrease in the number of school-leavers with matric exemption from 89,000 in 1995 to 63,725 in 1999 (with a marginal increase to 68,626 in 2000).

- A decline in the retention rate due in part to the more stringent financial and academic exclusion policies being implemented by HET institutions across South Africa since the late 1990s.

Differentiating the South African HET participation rate by race is revealing as is shown in table 3.21.

Table 3.21: Gross participation rates by population group (age cohort 20-24 years old) (%)

	African	Colored	Indian	White	Average
1993	12	13	40	70	19
1999	12	9	39	47	15

Apart from the significant decrease in the participation rate between 1993 and 1998, the other significant development is the substantial decline in the percentage participation of white students in the HET system. This decline may be due to a shift in enrolment patterns away from public to private HET institutions, and it may also be due to increased emigration of young white South Africans seeking to study abroad. Both developments will need to be monitored more closely in future.

Changing the distribution of HET enrolments

Table 3.22 illustrates the significant rise and fall of enrolments in HET that has taken place since the early 1990s.

Table 3.22: Change in enrolments in HET, 1993-1999

	1993	1998	1999
Universities	340,000	397,000	372,000
Technikons	133,000	208,000	192,000
Total	473,000	605,000	564,000

Changes in enrolment patterns have not been felt merely in terms of this quantitative decline. The changes have also impacted unevenly, triggering expansionary and contradictory effects in different parts of the system. The following diagram illustrates the impact of these changed enrolments on the institutional landscape.

Table 3.23: changes in enrolment, 1995 compared to 1999

	HWU (Afr)	HWT	HBT	HWU (Eng)	Tech SA	UNISA	HBU	Total Change
Changes	36,000	15,000	12,000	4,000	-20,000	-21,000	-22,000	4,000

These changed enrolment patterns are having a significant impact on the institutional landscape, with the former historically white (Afrikaans) universities and most technikons displaying great entrepreneurial spirit in winning new students to their institutions, often through part-time, distance programs. Enrolments at the historically black universities and the two traditional distance institutions (UNISA and Technikon SA) whose enrolments have declined by approximately 20% in the period 1995-1999.

Placement rates of FET and HET graduates

As was indicated earlier, unemployment of HET graduates is extremely low – at approximately 2%. The problem facing HET graduates in terms of placement and employment experiences is not unemployment but under-employment and discrimination in terms of barriers to occupational mobility – factors that have already been discussed.

Few reliable indicators of placements exist for graduates from the school and college sectors. One study by the HSRC in Kwa-Zulu Natal sheds some light on technical college graduate placements – and in general, it highlights the dysfunctional nature of the labor market. The study highlights the collapse of the structured apprenticeship-technical college labor market that ensured the placement of the majority of young graduated white artisans in the racially segregated labor markets of the 1940s-1970s. Table 3.24 highlights this change graphically.

Table 3.24: Transition in the apprenticeship labor market, 1960s-2000

Labor market for college trained apprentices in early 1960s –MID 1980s		Labor market for college trainees by year 2000
White apprentices only.	**Transition to** →	In legal statutory terms, labor market deracialized.
Apprenticeship central regulator of labor market.		Apprenticeship system in serious decline.
Most (white) trainees sponsored by employers. Trainees all part-time, have jobs.		Most trainees (now black) are full-time, not sponsored by employer. They struggle to get jobs.

In the era of the great apartheid economic boom (late 1950s to early 1970s) almost all students at technical colleges were apprentices who were sponsored by industry to study in mainly technical/engineering fields. They trained part-time in block release format, working for their employer for the rest of the time. They had access to work experience and received practical training from senior artisans on the shop floor.

In the period since the statutory deracialization of the apprenticeship system (1981), and more recently with the rapid deracialization of technical colleges (since 1994), these social conditions have been withdrawn. It is clear that South Africa's technical college model founded historically on a close articulation with a racially defined apprenticeship system is fundamentally inappropriate to today's changed political, social and economic conditions. These colleges need to become much more responsive to the employment opportunities in the SMME sector. This is the only sector where the prospects for employment growth at an intermediate level are strong.

4. The Human Resource Development Strategy

In April, 2001, the Ministries of Education and Labor jointly launched the Human Resource Development Strategy for South Africa: A Nation at Work for a Better Life for All. The strategy is underpinned by a set of institutional arrangements, including Sector Education and Training Authorities (SETAs), and the general reshaping of further and higher education to meet our human resources development goals.

Vision, Mission and Objectives

The overall vision of the HRD strategy is ***"A nation at work for a better life for all"***. Its key mission is : *"To maximize the potential of the people of South Africa, through the acquisition of knowledge and skills, to work productively and competitively in order to achieve a rising quality of life for all, and to set in place an operational plan, together with the necessary institutional arrangements, to achieve this.*

The strategy has three overarching goals:

Overarching goals	Target to be achieved
To improve the Human Development Index: an improved basic social infrastructure is critical for a productive workforce and a successful economy	An improvement is attained in the Human Development Index
To reduce disparities in wealth and poverty and develop a more inclusive society	The country's Gini Co-efficient rating is improved
To improve international confidence and investor perceptions of the economy	The country's position in the international Competitiveness League improves in absolute terms (currently 47th in key indices

The proposed strategy contains two elements which will drive the HRD Planning process:

- The institutionalization of HRD planning and implementation, through the building of structures which will ensure information flows between relevant role-players, and
- The collection and analysis of data in regard to twenty-five key indicators, which will tell us how the strategy is performing and inform the further development of the strategy.

The former element includes the establishment and operationalization of the Sector Education and Training Authorities (SETAs), the Skills Plans which are drawn up on an annual basis reflecting the state of the labor market within each sector, and the development of learnerships as a partial response to some of the imperatives of these markets. As a major player in many SETAs, the state is well placed to drive its own training needs through the SETA skills planning processes.

The latter element includes the appointment by the state of a specialized agency (the Human Sciences Research Council) to collect and analyze HRD data on an ongoing basis. This will inform us about strengths and weaknesses in the HRD system, and guide the relevant agencies or systems in addressing these. Other bodies that have a role to play include the Council on Higher Education, the National Board for Education and Training, and the South African Qualifications Authority, all of which perform key advisory and quality assurance functions.

The strategy depends upon effective co-ordination of the strategic objectives of human resource development[12]:

- a solid basic foundation, consisting of early childhood development, general education at school, and adult education and training;
- securing a supply of skills, especially scarce skills, within the Further and Higher Education and training bands of the National Qualifications Framework (NQF), which anticipate and respond to specific skill needs in society, through state and private sector participation in lifelong learning; and

---

[12] The strategic objectives of human resource development are shown in Appendix 1.

- an articulated demand for skills, generated by the needs of the public and private sectors, including those required for social development opportunities, and the development of small business and;
- a vibrant research and innovation sector which supports industrial and employment growth policies.

Each of these pillars will need specific intervention programs and ongoing reporting, but the ultimate success of the strategy will depend on the quality of the interaction between the various components. The plan is therefore to ensure that the necessary linkages, shown at the center of the diagram below, are made and sustained through the recommended institutional arrangements. The indicators will provide evidence of whether the planning process is successful or not within each of the four pillars, and in respect of the integrative function.

The strategy is therefore to ensure integrated HRD planning and implementation, monitored on a national, regional and sectoral level, with progress measured against approved indicators. The strategy does not seek to intervene in departmental "line-function" matters, except to locate these within a broader strategic framework, and to provide an institutional basis for their mutual co-operation with other government departments, private sector employers, and representatives of workers.

Integration

Cabinet will determine the shape of the Strategy and the specific targets to be achieved. As the lead ministers, the Ministers of Education and Labor will ensure that co-ordination mechanisms are put in place

The Department of Labor will be responsible for monitoring and reporting on the functioning of SETAs, including the state of Skills Planning in each sector, the development of learnerships to address identified skills shortages, and other matters relating to information flows.

The Department of Education will be responsible for reporting on the supply-side characteristics of the education and training system, particularly across the FET and HET bands. Institutions such as the Council on Higher Education (CHE) will also play a crucial role here.

The Department of Public Service and Administration will be required to report on the Public Service SETA (PSETA), in regard to similar matters.

The Department of Labor will also be required to report on the participation of State Departments in the relevant economic SETA, and /or the PSETA, and to monitor State contributions to these.

The benefits that will arise from the successful implementation of a HRD strategy in our country over the next five to ten years will be very significant. Primarily, the integration and attainment of complementarities between differing government policies (policies which, in the absence of a HRD strategy, would be implemented separately) will create a virtuous circle of increased economic growth and employment, an improved standard of living for all, broadened participation in the labor market, and a more educated and trained citizenry. In short, the effective implementation of this HRD strategy will indeed lead to a 'better life for all'.

Enterprise Training

The provision of workplace training is essential for organizational productivity, as well as a country's competitiveness and employment levels. During the apartheid era workplace training was received for the select few and the vast majority of the country's population received little or no training. It is vital that South Africa now develops a workforce that is flexible and responsive to the challenges and opportunities posed by the demands of development as well as such forces as globalization and the introduction of new working practices. In this connection , the Skill Development Strategy represent an intervention to "[foster] skill development in the formal economy for productivity and employment growth." The NSDS is aimed at providing the requisite mechanisms and opportunities for identifying and developing the needed skills for ensuring that all sectors achieve their full growth potential. Another direct benefit to be derived from fostering skill development in the formal sector is that it will help attract the critically needed local and foreign investment that is required to stimulate growth.[13]

---

[13] The vision and context of skills development strategy are shown in Appendix 2.

History of training in South Africa

In the past there was limited support for employee training in the workplace. The majority of workplace training was reserved for jobs that had been defined by apartheid, the majority of which were reserved for white males. Even the quality of this training was questionable, as it tended to be infrequent, unstructured and not geared towards any clear objectives.

In an attempt to identify a way forward for skill development the government established the Van Zyl Committee to investigate the low level of training for unskilled Black employees. This committee in 1973 made a number of recommendations for more state intervention in the field of training for Blacks. The first recommendation identified the need for nine public sponsored training centers. Another recommendation was that industrialists should establish training centers and these would be encouraged by a system of tax concessions. All of these recommendations were implemented through the Black Employees In-Service Training Act of 1976, the In-Service Training Act of 1979 and the Manpower Training Act of 1981. The Department of Manpower Also became responsible for approving and registering these training centers and by 1985 a total of 746 private training centers had been registered. However, a number of problems were experienced with the way in which the training centers were funded, including an inefficient use of resources and low employer take-up. The consequence of some of these problems was that the tax concession legislation that had been passed to support these initiatives was subsequently abolished.

Another structures which supported employee training during the apartheid era were Industrial Training Boards (ITBs). These were established to:

- Support the accreditation and setting of standards;
- Develop a number of levy systems to collect revenue and disburse resources to employers;
- Support the training and development of artisan and apprenticeships.

However, the Minister's Advisory Body, the National Training Board, identified a number of problems. For one, training was concentrated in a small number of sectors. Furthermore, when training did occur it tended to be structured classroom based training, as opposed to on-the-job training. Another shortcoming was that limited training was provided for SMMEs or the unemployed. Also, the ITBs were often viewed as debt collection agencies and this perception was worsened by the fact there was a high level of poaching in a large number of industries, which effectively meant that levy paying firms were subsidizing others.

Thus, the overall picture was one in which the training system provided limited incentives for employers to train and when training occurred it was primarily off the job and geared towards low productivity. However, another major drawback of the system was the lack of opportunities for certain groups to engage in training. The extent to which women benefited from training can be seen by reference to table 3.25. This data shows that as a result of past apartheid policies, training is still highly gendered and that men continue to dominate the managerial, professional and technical fields and women tend to be under-represented in these fields. Similar disparities are apparent when training received by the different population groups are compared. Indeed, compared to Whites the percentage of Blacks in professional/managerial or technician positions is significantly lower (see table 3.26).

Table 3.25: Persons trained according to occupational level by Gender

	Male	Female
Professional/Managerial	71.9	28.1
Technicians	82.9	17.1
Clerical./Administrative	42.1	57.9
Service/Sales	67.0	33.0
Craft related	93.5	6.5
Plant & machine operators	77.9	22.1
Unskilled laborers	79.1	20.9

Source: Department of Labor (2000). The National Skills Development Strategy, p.25.

Table 3.26: Persons trained according to occupational level by population group

	African	Colored	Indian	White
Professional/Managerial	16.4	4.9	7.4	71.3
Technicians	27.8	8.6	8.6	55.1
Clerical./Administrative	30.9	15.8	15.3	37.9
Service/Sales	44.3	17.3	16.2	22.2
Craft related	49.0	8.8	2.6	39.6
Plant & machine operators	83.6	9.3	2.3	4.9
Unskilled laborers	89.4	9.6	0.6	0.4

Source: Department of Labor (2000). The National Skills Development Strategy, p.25.

South African employers have a poor training track record. Two official indicators, managed by the Department of Labor in the past, recorded the following poor levels:

- Private sector workplace industrial training declined from a peak of 344 907 employees trained in 1990 to 129 133 in 1996 to a low of 77 812 in 1998.
- Newly indentured apprentices dropped from 9 660 in 1986 to a low of 3 129 in 1999 – a 66% decline. The total number of artisans in the workforce dropped from 29 826 in 1 986 to a low of 16 868 in 1999.

These indicators do not reflect all training activities but only those registered with the Department of Labor. A more recent HSRC Baseline Survey of Industrial Trining (2000) drew the following more nuanced conclusions about the rate of training – training was likely to benefit between 20-30% of the formal workforce of 8 million employees. That is, between 1.6 and 2.4 million employees benefited from some form of training in 1999. However, the quality and depth of this training is questionable. The majority was part-time, in-house, and primarily short-course in orientation. Much of it entailed activities such as brief training sessions in industrial relations, health and safety issues and basic computer skills. Little of it was externally accredited nor did much of it substantively upskill this percentile of the workforce.

Skills Development for the SMME sector

The SMME sector is seen as key to many of the problems already raised of far. According to the 1995 October Household Survey, a total of 1,7 million of the economically active population were employed in productive activities in the informal sector in 1995. The Reserve Bank estimates that the informal sector accounts for 7% of the South Africa's gross domestic product and 18% of employment [AVMC 1]. The South African Reserve Bank also estimates that 80% of the informal sector workers are Black African and that 60% of them are women with nearly 90% of the women involved in survivalist enterprises. Four in every five informal sector jobs (79%) occur in only two segments: Personal Services (58%) and Trade, Catering and Accommodation (21%). More than three-quarters of women own-account workers in the informal sector work in the Personal Services sector of the economy. This category includes domestic work. By contrast, two in every five (40%) men are found in the Trade, catering and Accommodation sector.

Informal employment is concentrated primarily in private households. This is not surprising considering that domestic occupations account for a large proportion of informal occupations. The next biggest sector is wholesale and retail trade, followed by agriculture, construction, manufacturing, community and transport, storage.

There are more than 300 000 formal and informal SMMEs in South Africa. In 1997, SMMEs accounted for approximately 45% of total employment, and it is estimated that they account for about 41% of the formal sector's gross national product. SMMEs largest contributions were in agriculture, (68% of employment, 65% value-added) trade, (51% of employment, 63% value-added) and construction, (58% of employment, 64% value-added).

One of the key challenges facing government policy regarding SMMEs is to enhance the employment creating potential of SMMEs. Skills development is a key issue. But skills development may have to be accompanied by additional financial support to optimize employment generation because nearly all SMMEs identify lack of finance as an inhibitor to growth. When small firms were asked what inhibited their growth, finance, lack of skills, problems with employees and lack of planning all were mentioned as internal constraints.

The National Skills Development Strategy

The Minister of Labor has adopted a National Skills Development Strategy (NSDS) that has five objectives and twelve specific targets[14]

The vision is ***Skills for productive citizenship for all***. This vision is underpinned by six guiding principles: lifelong learning, the promotion of equity, demand-led, flexibility and decentralization, partnership and cooperation, and efficiency and effectiveness.

The National Skills Authority proposes the following mission statement to encapsulate the goals of the national skills strategy
To equip South Africa with the skills to succeed in the global market and to offer opportunities for self-advancement to enable them to play a productive role in society.

To fulfill this mission five objectives have been identified to drive the national skills strategy (table 3.27).

This objectives will frame the work of the Department of Labor and the Sector Education and Training Authorities. They will also define the uses of the National Skills Fund and the skills development levies. The objectives offer priorities around which government, employers, trade unions and the wider community can unite to achieve the skills revolution the country requires.

Table 3.27: Objectives and Success Indicators (target)

Objective	Success indicators
1. Developing a culture of high quality lifelong learning	-By March 2005, 70% of all workers have a Level One Qualification on the NQF -By March 2005, a minimum of 15% of workers to have embarked on a structured skills development program of whom at least 50% have completed their program satisfactorily -By March 2005, an average of 20 enterprises per sector (to include large, medium and small firms) and at least five national government departments,

---

[14] The NSDS is the culmination of research and discussion within the Department of Labor and the National Skills Authority, and consultations with several other stakeholder organizations.

	to be committed to, or have achieved, an agreed national standard for enterprise-based, people development
2. Fostering skills development in the formal economy for productivity and employability	-By March 2005, 75% of enterprises with more than 150 workers are receiving skills development grants, and the contribution towards productivity and employer and employee benefits are measured. -By March 2005, at least 40% of enterprises employing between 50 and 150 workers are receiving skills development grants, and the contribution towards productivity and employability is measured -By March 2005, learnerships are available to workers in every sector (precise targets will be agreed with each SETA) -By March 2005, all government departments assess and report on budgeted expenditure for skills development relevant to Public Service, Sector and Departmental priorities
3. Stimulating and supporting skills development in small businesses	-By March 2005, at least 20% of new and existing small businesses to be supported in skills development initiatives and the impact of such support to be measured
4.Promoting skills development, employability and sustainable livelihoods through social development initiatives	-By March 2003, 100% of the apportionment of the National Skills Fund to social development is spent on viable development projects -By March 2005, the impact of the National Skills Fund is measured by project type and duration, including details of placement rates which shall be at least 70%
5. Assisting new entrants into employment	-By March 2005, a minimum of 80,000 people under the age of 30 have entered learnerships -By March 2005, a minimum of 50% of those who have completed learnerships are, within six months of completion employed (e.g. have a job or are self-employed), in full-time study or further training or are in a social development program)

Central to the achievement of objectives and targets is the pursuit of equity. The social cohesion and elimination of poverty for which our society yearns will not be achieved without tackling endemic problems of racial and gender inequalities and negative discrimination. The following national targets are adopted for the beneficiaries of learning program across the five objectives

- 85 per cent to be black
- 54 per cent to be female
- 4 per cent to be people with disabilities

These objectives are bold and ambitious. The HSRC baseline study highlights limited achievements in almost all of these skill objective areas. However, the targets are within reach if real commitments to train are harnessed in the next five years. The HSRC baseline study provides the following current benchmark levels against which some of the targets set by the National Skills Strategy can be evaluated:

- Blacks currently constitute 68% of the beneficiaries of training. This achievement level is reasonably close to the target of 85% as set out in the NSDS.
- Women constitute 30.1% of the beneficiaries of training (as measured in the HSRC Baseline study). Attaining the target of 54% remains a major challenge in the years ahead
- 64.1% of persons currently employed possess the GETC (equivalent to the current Grade 9 certificate) that is pegged at Level One on the NQF. The target of 70% is clearly attainable within the five-year period (2000-2004) if significant resources are put into ABET training in the workplace. Of course, these formal sector based efforts will not resolve the high levels of illiteracy outside of the workplace where a far greater proportion of unemployed people do not possess a qualification equivalent to NQF Level One.

- The target for the training of the disabled will be one of the toughest challenges to meet. The baseline survey indicates a firm participation rate of 6% in terms of firms that employ disabled people. The number of disabled trainees as a percentage of total trainees was 0.3% - significantly lower than the NSS target of 4%
- The targets set for Learnerships appear to be very ambitious, with the aim of 80 000 beneficiaries by the year 2004. However, the baseline survey of employer attitudes toward Learnerships was positive, with 43% indicating their intention to introduce

them in the short-term, and 51% in the longer-term

Learnerships

The concept of learnerships is central to this integrated skills development system. Learnerships are primarily workplace learning programs supported by structured institutional learning which result in a qualification.

These qualifications go beyond those traditionally offered through formal education or work-related training systems in a number of ways, however. Significantly

- they include a wide range of clusters of learning, which, once registered with the South African Qualifications Authority (SAQA), are intended to provide portability and potential employability.
- they are also available to a wider range of learners than previously addressed, including the employed, pre-employed or unemployed. In addition, access is not determined by prior education or training, and entry is available at a wide range of levels, depending on each learner's competence.

The learnership system is only one of a range of interventions aimed at transforming access to education, training and work, however. it therefore does not aim to be all things to all people. Other strategies, like the skills programs, provided different training options which learners could access if the more comprehensive learnerships are not useful, available or appropriate for them.

Sector Education and Training Authority

Role of SETAs

Effective co-ordination at national and sectoral levels is crucial for the successful implementation of the skills development strategy.

While the National Skills Authority (NSA) will co-ordinate the implementation of the Skills Development Act (no 97 of 1998), sectoral training intermediaries will support education and training at enterprise, workplace, pre-employment and target group levels. In most instances the overarching co-ordination role will be that of SETAs.

SETAs – which have replaced the former Industry Training Boards (ITBs) – play a vital role in implementing the skills development strategy.

Until recently, ITBs have played a key role in the provision and monitoring of training for industries. SETAs go beyond the boundaries of this role in three respects :

1. "sectors" are larger that "industries" and include a number of industries previously demarcated separately e.g. maritime and aerospace;
2. sectors are more inclusive than industries as they incorporate work that is not part of formal industry. For example, the transport sector may now include learning programs for "road passengers" (taxis and buses) which would previously have been excluded.
3. SETAs are responsible for also including people who are not in formal employment e.g. in SMMEs, in job creation programs, people who are pre-employed or unemployed etc.

The shift to the more inclusive structure of SETAs is central to the implementation of a skills development strategy that equally goes beyond the historical boundaries of work-related education and training.

The establishment and functions of SETAs are dealt with in more detail later in this document.

Quality assurance

Assuring the standards of qualifications is critical if the market is not to be flooded with certificates whose value is, at best, unknown. The successful implementation of this skills development strategy is ultimately assessed by whether or not there is growth in employment, social development and the economy. Training for training's sake with little attention to quality, credibility and relevance will fail to address these issues.

It is the responsibility of SETAs both to register qualifications with SAQA as well as to assure their quality. They can, and often do, delegate this ETQA (or Education Training Quality Assurance) function to other bodies, however.

As quality must be assured both in terms of the educational level (band) as well as the sectoral speciality, it is common for two bodies to assure the quality of one qualification.

Typically these would be an educational ETQA and an occupational ETQA.

While quality assurance clearly applies to many contexts beyond skills development and learnerships, this document will focus only on the application of quality assurance to these strategies. Again the details of quality assurance will be dealt with later in the document.

1.What are SETAS & What do they have to do?

SETAs are central to the implementation of the Skills Development Act (no 97 of 1998) inasmuch as they are responsible for facilitating the development and implementation of education and training within their economic sectors.

1.1 Establishment and composition

SETAs are established for each economic sector as demarcated by the Minister of Labor.

They comprise representative stakeholder bodies – namely organized labor, organized employers (including small businesses), relevant government departments, and, possibly, interested professional bodies or bargaining councils active in that sector.

SETAs may establish chambers within themselves (which specialize in sections of that economic sector) – and they may devolve their functions, including quality assurance, to their chambers.

1.2 Functions

Based on the Skills Development Act (No 97 of 1998), some of the functions of a SETA are to:

1. develop a Sector Skills Plan within the framework of the National Skills Development Strategy;
2. implement its Sector Skills Plan by
   - establishing learnerships;
   - approving workplace skills plans;
   - allocating grants to employers, education and training providers and workers

/employees; and
   - monitoring education and training in the sector;
3. promote learnerships by
   - identifying workplaces for practical work experience;
   - supporting the development of learning materials;
   - improving facilitation of learning; and
   - assisting in the conclusion of learnership agreements;
4. register learnership agreements with the Department of Labor;
5. become accredited as an ETQA by
   - applying to SAQA for accreditation within a week of its establishment; and
   - gaining accreditation within 18 months from the date of the application.
6. collect and disburse the Skills Development levies in its sector;
7. liaise with the National Skills Authority in the Department of Labor on
   - the National Skills Development Policy;
   - the National Skills Development Strategy; and
   - its Sector Skills Plan;
8. report to the Director-General of Labor on
   - its income and expenditure; and
   - the implementation of its Sector Skills Plan;
9. liaise with the employment services of the Department of Labor and any recognized education body to improve information
   - about employment opportunities, and
   - between education and training providers and the labor market.

SETAs' responsibilities

SETAs have the primary responsibility for setting up learnerships in their economic sectors. After checking that the proposed learnership meets the relevant criteria, SETAs are required to register learnerships with the Department of Labor.

In order to decide which learnerships to prioritize and establish, SETAs should establish the projected skills needed within their Skills Information Systems. As this information is likely to have a formal employment/industry bias, SETAs are also required to expand the economic boundaries by:

- encouraging providers and individuals to propose learnerships in occupational areas to which SETAs may not have easy access or which they have not considered (provided that there is a demonstrated need for these skills);

- supporting infrastructure and community development activities that fall within their sector; and
- encouraging entrepeneurship and self-employment in areas where the possibility for income generation and employment creation is real.

Funding of SETAs

1) Financing the Skills Development Strategy

During the introduction to his 1999/2000 budget, the Minister of Finance confirmed that the Skills Development Levy-grant scheme will be included in the national Budget from April 2000.

The scheme will be financed by a 0.5% levy on the payroll of private sector employers in 2000-2001 and 1% thereafter. The scheme is estimated to yield about R1 billion for training and development in 2000, increasing to about R2 billion in 2001. Of this

- 80%(i.e. R800 million) will go to SETAs; and
- 20%(i.e. R200 million) will go to the National Skills Fund.

The Minister also mentioned that donor funds will be spent on skills development in the next three years.

2) Sources of SETA funding

According to the Skills Development Act (No 97 of 1998), a SETA is financed in the following ways.

- The skills development levies collected in its sector
  A SETA may collect levies in terms of the Skill Development Levy Act.
- Monies paid it from the National Skills Fund
  The Skills Development Act stipulates that SETAs will be financed from monies paid to it by the National Skills Fund. It is anticipated that 20% (i.e. R200 million) of the money generated from the Skills Development Levy-grant scheme would go to the National Skills Fund. The way in which this money will

be paid to SETAs will be part of the criteria and guidelines which will be available from the National Skills Authority.

- Grants, donations and bequests made to it and money received from any other source

  SETAs may develop proposals to seek funding for their developmental costs. Through donor agencies and other funding agencies, amounts could be allocated to fund development activities.
- Income earned on surplus monies deposited or invested

  SETAs could open a fixed investment bank account.
- Income earned on services rendered

  SETA could charge minimal fees for the administrative costs of providing services – such as accreditation of providers and issuing of certificates to learners. Such fees still have to be determined in co-operation with SAQA.

The Skills Development Act (No 97 of 1998) does not separate the financing of administration and the functions within SETAs, so the money generated will have to be used for both activities. Of the income allocated to functions, some will have to be allocated to paying for the ETQA function. One of the sources for this could be a proportion of the levies collected.

3) Financial management of SETAs

The Monies received by a SETA may be used only to

- fund the performance of its functions; and
- pay for its administration within the prescribed limit.

The monies received must be paid into a banking account at any registered bank and may be invested only in certain ways.

Each financial year, every SETA must submit a statement of its estimated income and expenditure for the following financial year to the Minister of Labor. It must also keep the usual proper records. The Auditor-General must audit the accounts, financial statements and financial management of a SETA, and report to the Minister.

SETAs

25 Sector Education and Training Authorities were established by the Minister of Labor on 20 March 2000. SETAs are key to the implementation of the National Skills

Development strategy and in identifying priorities for skills development.

Each SETA serves a defined sector, and a sector covers a groups of economic activities that are linked and related. For example, there is a SETA that serves construction; another is concerned with wholesale and retail activities and the whole of transport sector is served by a single SETA.

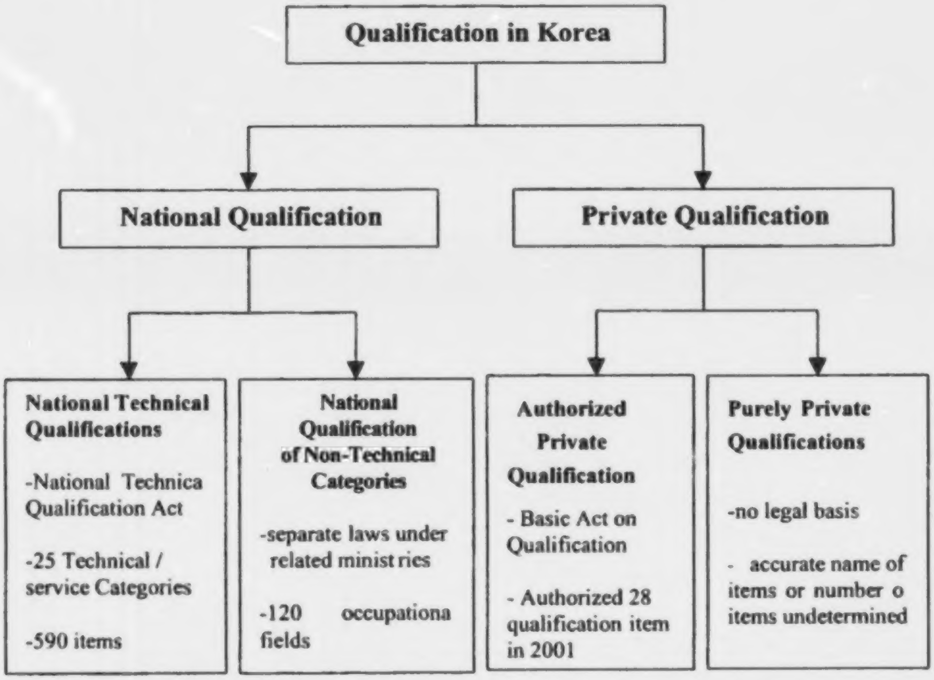
IV. Vocational Qualification System

Korea

1. The Structure of Korean Qualification System

The qualification system in Korea can be divided into national qualification and private qualification as shown in Figure 1. National qualification consists of national technical qualifications and other non technical national qualifications. Private qualification(the term of 'private' in this context can be understood as meaning 'voluntary')also comprises two parts, authorized and unauthorized.

Figure 4.1 Qualification System in Korea


Qualification in Korea
National Qualification
Private Qualification
National Technical Qualifications
-National Technica Qualification Act
-25 Technical / service Categories
-590 items
National Qualification of Non-Technical Categories
-separate laws under related ministries
-120 occupationa fields
Authorized Private Qualification
- Basic Act on Qualification
- Authorized 28 qualification item in 2001
Purely Private Qualifications
-no legal basis
- accurate name of items or number o items undetermined

Source : KRIVET(2000). The Vocational Qualification System in Korea

BEST COPY AVAILABLE

2. Historical Development of the Technical Qualification System[15]

The establishment of the current national technical qualification system has its beginnings in the enactment and promulgation of the National Technical Qualifications Act (Act No. 2672) on December 31, 1973. Prior to the adoption of this Act, the administration of technical qualification was conducted in the following categories: ① through the laws applied according to industry type since 1958, ②certification system based on the 1967 Vocational Training Law, ③certification of the Business Management category conducted by the private sector since the late 1950s.

1) Technical Qualification Acts

(1) Professional Engineer Act

The professional Engineers Act (No. 1442) was enacted on November 11, 1963 and was implemented by Presidential Decree (No. 1819) on May 27, 1964. Voted on by the Committee for National Reconstruction following the military coup, it was six years behind Japan. The purpose was stated as "determining the qualifications for a professional engineer and the suitability of their work in order to contribute to the enhancement of science and technology and to the development of the national economy" (Act Article II). An professional engineer was defined as "a person with a high-level professional knowledge of science and technology as well as applicable skills based on practical experience." "Applicable skills", furthermore, was defined as technical tasks such as planning, research, design, analysis, investigation, testing, operation, construction, evaluation or guiding and supervising of these activities based on professional knowledge and practical experience (Decree Article II). There were 13 categories in the qualification test and they were divided into the fields of agriculture, fishery, forestry, electricity, machinery, chemical engineering, textiles, metal, mining, shipping, aviation, construction, and applied science. The test itself consisted of a pre-test and the actual test, where examinees were tested on their applicable ability through written exams and oral interviews. For the administration of the certification of engineers, an Administration Committee was established under the Economic Planning Ministry. The law also states in Article 32 that a Korean Technical Society needs to be formed for the purpose of developing the skills of engineers and fostering improvement in their work.

---

[15] HRD Korea(1996), Change of National Technical Qualification System and Items

The test for professional engineer was conducted under the auspices of the Minister of the Economic Planning Ministry until March 30, 1967 when it was moved to the Ministry of Science and Technology. In 1973 the National Technical Qualification System was enacted and following the establishment of the Korean Technical Certification Agency in December 1976, the administration of the test was put in charge of the agency.

(2) Construction Industry Act

The Construction Industry Act, enacted on March 11, 1958 (No. 477), deals with approving licenses for those involved in construction, contracting, and certifying construction engineers for the purpose of developing the construction industry. Article 16 (certifying engineers) defines a construction engineer as someone who is "one of the following categories of civil engineers, construction engineers, electric engineers and has received certification from the Minister of Internal Affairs following inspection by the Construction Engineers Inspection Committee."

Qualification was further classified into three types according to skill type when the law was amended on September 24, 1958 (No. 498). The administration of these activities was undertaken by the National Construction Office and moved once again to the Construction Division in 1963.

(3) Special Order Regarding Military Procurements Act

The Special Order (No. 2504), enacted on February 17, 1973 for the purpose of efficient procurements of military supplies, required military suppliers and research institutes to secure and provide subsidies to certified engineers and craftsmen in precision machining and precision measuring recognized by the Minister of Defense to be indispensable to military suppliers or research institutes.

Precision mechanics recognized by the Minister of Commerce and Industry were limited to those having passed the qualification exam Which began on March 22, 1972. Determined by a practical test and a written exam, categories included Class I and II precision mechanics and Class I and II precision surveyors.

(4) Electrical Industry Act

The Electrical Industry Act was enacted on December 31, 1961 (No. 953) in order to establish a basic policy regarding the electrical industry and contribute to its development and the public welfare.

According to the Act, electrical industries were mandated to appoint a supervising engineer in charge of all areas dealing with electrical matters. The supervisors were divided into Class I, II, and III and had to be certified by the Ministry of Commerce and Industry. On October 11, 1973 an amendment (Decree No. 6900) was made to expand certification of supervisor engineers to dam repairs (Class I, II), boilers and turbines (Class I, II).

The supervising electrical engineers received their license by qualifying under the national electrical engineers exam ordered by the Ministry of Commerce and Industry and by completing a practical apprenticeship period at an institution authorized by the Ministry of Commerce and Industry. Dam repairs supervisors and boiler turbine supervisors were granted licenses according to their education levels and qualifications as well as practical experience.

The national qualification test for electrical supervisors is categorized according to class and is a two-step process involving a written exam which is followed by an oral interview, intended only for those who passed the written exam. Someone who passed the written exam was able to waiver the first stage the next year in the case of having failed the oral interview the first time.

(5) Electrical Construction Act

To issue licenses to electrical construction companies, to foster electrical engineers, and to secure safe and proper construction the Electrical Construction Act was enacted on February 26, 1963 (No. 1280).

Accordingly, electrical construction companies were required to keep an electrical engineering supervisor, certified by the Ministry of Commerce and Industry and divided into three types, for efficient managing of engineers. As for the criteria for qualification, Type A required the following qualifications: certification in Electrical Engineering Supervisor Class I or II; a university degree in electrical engineering and four years or more of practical experience (six years or more for beginners); or Type B certificate holders with six or more years or practical experience. Type B requirements were a Class III Electrical Engineering Supervisor certificate; technical high school education with four or more years of experience; or Type C certificate holders with six or more years of experience. Type C required five or more years of experience in electrical construction and qualification under the Type C electrical engineering written exam

(6) Beauticians Act

Created in December 5, 1961, the Beauticians Act (No. 798) stipulated the qualifications of beauticians and barbers in order to improve public sanitation. Article 3 stated that, "A person is qualified to become a beautician or a barber after completing a course at a technical high school authorized by the Minster of Health and Welfare for one year or more and after receiving a license for passing a qualifying exam. administered in every city and province." The qualification exam consisted of a written and a practical test.

(7) Test Rules for Welders

This rule was enacted on May 6, 1966 (Transportation Division Order No. 222) for the stipulation of details regarding qualification, the technical exam and its process, and certification of welders. The qualifying exam for welders commissioned two or more people with sufficient knowledge in welding to become test supervisors and was divided into written and practical parts. On July 18, 1969, the system was further classified into Class I, II, and III welders.

(8) Radio (electric wave) Regulation Act

Enacted on December 31, 1961, the Radio Regulation Act sought to improve public welfare by managing the use of radio wave in an efficient manner. According to the law, the operation of electric wave equipment was required to be done by licensed operators

who had passed the qualifying exam. Qualification categories included Class I, II, III, and Telephone Class Radio Telecommunications Operator; Class I, II, III Radio Engineers, and Special Class Radio Engineers; and Class I, II, and III Amateur Radio Telecommunications Engineers, certified through a written and practical test.
On March 14, 1967 the law was amended (No. 1913), changing the Telephone Class Radio Engineer item to the Special Class item.

2) Certification Under the Vocational Training Act

The certification scheme began to be systematically implemented on January 16, 1967 with the enactment of the Vocational Training Act (No. 1880) for motivating workers to acquire skills, for assessing and standardizing the degree of skills, for job stability and efficient allocation of labor, and for establishing a sense of professionalism.

As ordered by the President, the certification process was to be carried out by someone designated by the Labor Office, including the director of a vocational training organization or the head of a local government office, who was to administer all or parts of the qualifying test.

In addition, certification was divided into two steps: a written subject test and a practical test. Each item was classified into ① Class II, people with the degree of skills that would normally belong to an experienced engineer, and ② Class I, originally intended to be people who had acquired several years of experience after qualifying for Class II and therefore were exempt from parts or all of the written exam

Eligibility for the qualifying exam was given to those who had completed the required course at a public vocational training institution or an authorized vocational training center or those who were recognized as having higher qualification.

Certificates were handed out to those who passed the qualification process, at which point they were required to fill out the necessary items in the registry and were given the title "craftsman," an exclusive term of address.

The head of the Labor Office was also requested to give priority to craftsmen when mediating jobs, in accordance with the original objective of attracting interest in skill certification.

After the Vocational Training Act was enacted in June 1967 the first skill certification exam was conducted, but there was no one qualified enough to apply for Class I status. As for Class II, there were 13 categories and 1754 out of a total of 2646 applicants passed the exam. In the ensuing practical exams for 15 categories held in August of that year, 434 out of 1407 examinees passed. This was the first ever certification based on the Vocational Training Act.

Later in 1968, a de facto 4-level system of certification was implemented based on the amendment that put Class III and Class IV apprentices under Class I and Class II craftsmen. 1357 out of 2012 applicants passed the 16 categories of the written exam, and 4266 out of 8349 applicants of the 67 practical exam items passed.

The certification scheme that had been implemented with the enactment of the Vocational Training Act and the Ministerial Decree of the Ministry of Labor took a step ahead by instituting the legal basis for classification and specific exam procedures in the certification system with the Implemental Regulation Amendment on April 28, 1969.

Pursuant to this amendment, the application requirements were clearly laid out, and exam exemption criteria based on the stipulations in Article 20 of the Vocational Training Act were put forth. For example, those who passed a written or practical certification exam in the same field and class were exempted from the next subject or practical exam. Those who completed a training course in communication authorized by the head of the Labor Office were exempted from the Class II certification written subject test. In addition, those who won awards in skills competitions held under the auspices of the Labor Office or those who received certification after passing the practical exam were seen as having authorized certification.

One of the main contributions of the Vocational Training Act was that it established an efficient operating system of providing skilled laborers. Prior to 1967, most labor demand was filled by standards of education level and experience, which led to confusion and contentions regarding fairness.

For a more scientific and rational method of certification and after-qualification management, plans for a single integrated certification system under the Labor Office were introduced. In addition, to meet the demands for the establishment of a more practical organization of certification categories the Implemental Regulation was amended on February 24, 1971 as a Decree of the Ministry of Health and Welfare.

Following this amendment, licenses for high pressure gas and frozen goods were changed to certification items under the Vocational Training Act by the Ministry of Commerce and Industry.

As for the certification items, 16 items including drill and sheet-metal work were abolished while 97 items were added, resulting in 97 subject items including die and mould and prime mover and 107 practical exam items. On May 6, 1975 eight more items were added in the amendment.

The Basic Act on Vocational Training, introduced as the Vocational Training Act was abolished on December 31, 1976, in order to nurture skilled workers in demand by industry, to promote employment stability and to raise the social position of workers and to contribute to economic development. The basic objectives remained unchanged from its predecessor, but changes were made for a broader applicability in the domain of vocational training.

For instance, certification was classified into Master Craftsman, Class I Craftsman, Class II Craftsman, and Apprentice. The Master Craftsman group was chosen based on credentials such as work experience and an interview, the Class I and Class II Craftsman groups were required to pass both a written and practical exam, while the Apprentice group was selected from a practical exam.

A total of 148 items were set in place, 119 craftsman items absorbed from the Vocational Training Act and 29 additional items in business management such as abacus calculation, bookkeeping, typewriting and shorthand. The Class III, IV, V Craftsman groups were all changed to the Apprentice group when absorbed into the new act.

The certification was carried out directly by the Labor Office or by public vocational training institutions and authorized organizations.

On December 31, 1981 the amendment of the act separated the certification scheme from the Basic Act, from which the National Technical Qualification Act was born. 141 items, resulting from the deletion of 7 items including typewriting and repair craftsman apprentice, were absorbed into the new Act.

3) Certifications in the Business Management Category

(1) Overview

Since the late 1950s, the certification of business management fields such as abacus calculation, bookkeeping, typewriting were brought into focus by various interest groups. In November 1964, the Korean Vocational Education Promotion Committee received authorization from the Ministry of Culture and Education to implement certification, but in the 1970s five other organizations (Korea Administrative Functions Development Association, International Vocational Skills Certification Center, Korea Administration Promotion Agency, and the Korea Business Skills Efficiency Association) received authorization from the government to certify qualification in abacus calculation, bookkeeping, typewriting and related fields.

Whereas there were various ministries that watched over the certification by the 6 business management certification institutions, in order to improve the operation of the certification system and raise its credibility the system was integrated into the single organization of the Labor Office in 1977.

In November 1977 the Korea Business Skills Development Center was established and began to carry out the certification of business management skills, previously undertaken by the Labor Office and 6 different organizations.

Although the certification of the business management field by the private sector was integrated into one, there remained the Korean Chamber of Commerce and Industry under the Ministry of Commerce and Industry and Education Committees in various cities and provinces, creating a tri-sectional system of operation.

On December 31, 1981 and April 29, 1982, following amendments in the NTQS, the certification of the business management field was absorbed into technical qualification and administered by the Korea Vocational Training Management Agency until January 1984 when it became relegated to the Korea Chamber of Commerce and Industry (KCCI) once again.

(2) Certification through the Basic Vocational Training Act

Following the Amendment of the Implemental Regulation of the Vocational Training Act on April 28, 1969, the item of type-operating craftsman was added as a certification item and the exam was administered for Levels 1 to 4 in both Korean and English. Upon the Amendment on May 4, 1974 three additional categories of abacus calculation, bookkeeping, and shorthand were created. The categories of bookkeeping and shorthand were divided into 4 levels, while the typewriter operating item was divided into 5 levels.

The implementation of the certification was carried out by the Labor Office or commissioned to the government-authorized International Vocational Skills Certification Center. However, with the enactment of *the Basic Act on Vocational Training* on December 31, 1976 the items of abacus calculation, bookkeeping, and typewriting (shorthand was excluded) were absorbed into the Basic Act.

Following the enactment of the Basic Act, abacus calculation was classified into 11 *dans* and 7 *geups*[16] (18 levels in total), bookkeeping into 4 levels, and typewriting into 6 levels. Thus the business management field consisted of 3 categories with 28 levels in total, and certification was administered by the Korea Business Skills Development Center beginning in 1977.

The absorption of the shorthand item into the Basic Act was carried out on July 6, 1979 by the Decree of the Labor Office and was divided into 7 levels. In addition, Level 6 of the typewriter operating item was deleted.

After the Amendment of the National Technical Qualification Act on December 31, 1981 and the Amendment of its Implemental Decree on April 29, 1982, qualification of the business management field was absorbed into the national technical qualification system. In the abacus calculation item, Levels 6 and 7 were deleted and so 11 *dans* and 5 *geups* were absorbed into the technical qualification category. Bookkeeping had 4 levels and shorthand ended up with 5 levels after the deletion of Levels 6 and 7. As of October 31, 1991 a Presidential Decree newly created word processing and secretarial work categories.

Thus a total of 5 categories and 29 levels in business management are classified as national technical qualifications and its certification was relegated to the Korea Vocational Training Management Agency from the Korea Business Skills Development Center, and again to the KCCI where it is currently being administered.

(3) Certification through the Korea Chamber of Commerce and Industry (KCCI)

The Korea Chamber of Commerce and Industry has been administering as well as setting up the rules of the certification exams of abacus calculation, bookkeeping, and typewriting categories.

The certification rules of the abacus calculation item were announced on July 28, 1962 for improving and diffusing abacus skills and increasing efficiency in business management. There were 7 levels set and exam questions were formulated according to the rules of vocational training courses.

In February 1964, an amendment was made to the Certification Exam Rules, creating 1 *dan* over 1 *geup*, which went up to 10 *dans* in 1970, to 11 *dans* in 1972 and resulted in 18 levels ranging from the lowest 7 *geup* to the highest 11 *dan*. In 1978, however, 6 and 7 geup were deleted and the remaining 16 levels were absorbed into the National Technical Qualification Act on April 29, 1982.

Bookkeeping certification was implemented according to the rules determined on November 8, 1962 for the promotion of efficiency and enhancement of capabilities. All 4 levels were absorbed into the NTQS in 1982 following the enactment of the Act.

Typewriting certification was implemented based on the Korean and English Typewriting Skills Certification Exam Rules enacted on October 19, 1965 to promote the spread of the use of typewriters and for efficiency in office work. In 1978, Levels 6 and 7 were deleted and in 1982 Level 5 was deleted as well, leaving the remaining 4 levels to be absorbed into the NTQS. But on October 16, 1995 a Presidential Decree abolished this item of certification.

(4) Vocational Education and Testing of Vocational Skills

The Certification Rule of the Various Vocational Skills was enacted on March 10, 1970

---

[16] "geup" in Korean means "level"

as a Decree of the Ministry of Culture and Education to assess the vocational skills of various vocational education courses in middle and high schools, technical schools, technical high schools, etc. The 4 items of certification were abacus calculation, bookkeeping, shorthand and typewriting.

Abacus calculation was classified into the Special Class and 7 additional levels; bookkeeping had 4 levels; while shorthand and typewriting each had 7 levels. The administration of the exam was undertaken by the Education Committees under each city and province, which handed out certificates to all qualifiers.

Following the Amendment on August 31, 1973 the Special Class was further divided into 8 *dans*, extending the total number of levels to 8 *dans* and 7 *geups*.

On September 15, 1980, with the amendment of the exam rules, the 6th and 7th *geup* of the abacus calculation item, shorthand and typewriting were deleted. On April 29, 1982 a total of 29 categories were absorbed into the National Technical Qualification Act.

4) Introduction of the National Technical Qualification System

(1) Enactment of the National Technical Qualification (NTQ) Act

On December 31, 1973 the government enacted the NTQ Act (Act No. 2672). Ensuing were the Implemental Decree of the same act (October 16, 1974) and Implemental Regulation of the same act (December 31, 1974), from which the establishment of the system was rendered complete.

(2) Subsequent Developments

The NTQ Act, since its enactment in 1973, has gone through 4 amendments and the Implemental Decree has gone through 18 amendments since its enactment in 1974. A chronology of events and developments is provided below.

① NTQ Act

a. Enactment December 31, 1973 Act No. 2672 (newly created)

b. Amendment April 8, 1981 Act No. 3422 (Labor Office promoted to Ministry of Labor)

c. Amendment December 31, 1981 Act No. 3510 (overseeing of certification relegated to the Minister of Labor from the Minister of Science and Technology)

d. Amendment December 20, 1983 Act No. 3664 (making compulsory the post-qualification education of certificate holders every 5 years)

e. Amendment March 27, 1997 Act No. 5318 (enactment of the Basic Act on Qualification and stipulation of private qualification)

The first amendment of the NTQ Act dealt with the promotion of the Labor Office to the Ministry of Labor, which succeeded all the former's duties. The second amendment at the end of that year moved the authority of certification from the Division of Science and Technology to the Ministry of Labor. The main content is as follows: first, the administrative duties were relegated to the Labor Ministry from the Division of Science and Technology; second, the Technical Qualification System Inspection Committee was established under the Ministry of Labor; third, overlapping certifications were abolished; fourth, the use of the title of technical qualification was forbidden; fifth, preferential hiring was provided for holders of national technical qualification certificates by employers; sixth, eligibility for the qualification exams was withheld for three years in the case of cheating; and finally, fines of 2 million to 5 million *won* were assigned for unauthorized borrowing of the certification title.

On December 20, 1983 the third amendment mandated the receiving of post-qualification education after acquiring the qualification in order to update the recipient's capabilities. Parts of the amendment are as follows: first, technical qualification was divided into the Engineer group and Craftsman group, with the Service group added; second, the implementation of post-qualification education was stipulated; third, candidates were exempt from overlapping subjects in the qualification exam could be exempted; fourth, acquirers of technical qualification were required to register and had to re-register every 5 years; fifth, national qualification certificate holders were given preferential treatment during times of authorization of opening businesses and such; sixth, the priority hiring clause of business owners acquiring technical qualification was changed to preferential hiring; finally, a temporary suspension of qualification was allowed to occur if re-registration didn't take place.

The fourth amendment carried out on March 27, 1997 proclaimed with it a separate Basic Act on Qualification, which was promulgated on April 1, 1997. Its main contents are: a) definition of technical qualification and private technical qualification, b) prohibition of taking similar qualification exams, c) renaming of technical qualification notebook to qualification card or certificate, d) agreeing to authorize private technical qualification, e) extension of total or partial exemption of qualification exam subjects, and f) raising penalties(5 million won→10 million won, 2 million won→5 million won).

② Implemental Decree of NTQ Act

a. Enactment October 16, 1974 Presidential Decree No. 7283 (newly created)

b. Amendment December 29, 1975 Presidential Decree No. 7902

c. Amendment December 31, 1976 Presidential Decree No. 8357 (administration exam partially commissioned to the Korea Technical Certification Agency)

d. Amendment December 31, 1977 Presidential Decree No. 8799 (extension of categories available for commissioning)

e. Amendment January 6, 1979 Presidential Decree No. 9278
(mandatory certification authority relegated to Minister of Labor Office)

f. Amendment June 22, 1979 Presidential Decree No. 9509 (notification of qualification cancellation to the Korea Technical Certification Agency)

g. Amendment December 31, 1980 Presidential Decree No. 10124
(qualifications determined for categories including Class I heat engineer)

h. Amendment April 29, 1982 Presidential Decree No. 10802 (Business Management certification commissioned to Korea Vocational Training Management Agency, absorbed into national technical qualification)

i. Amendment December 20, 1983 Presidential Decree No. 11281 (integration of education level and field experience requirements for exam eligibility, certification of Business Management categories commissioned to KCCI)

j. Amendment November 15, 1984 Presidential Decree No. 11543 (Projection craftsman absorbed)

k. Amendment October 31, 1991 Presidential Decree No. 13494 (registration duties of wireless equipment item undertaken by order of the National Technical Qualification Act)

l. Amendment July 8, 1993 Presidential Decree No. 13925 (loosening of Engineer application requirements)

m. Amendment November 10, 1994 Presidential Decree No. 14413 (qualification system for environmental specialists newly created)

n. Amendment October 16, 1995 Presidential Decree No. 14783 (19 categories of multi-skilled engineers newly created)

o. Amendment October 28, 1996 Presidential Decree No. 15161 (construction electronic equipment engineer classified under electric field)

p. Amendment June 2, 1997 Presidential Decree No. 15384 (Industry Promotion Agency→Ministry of Tade and Industry, Fisheries Office→Ministry of Maritime Affairs and Fishery

It has been nearly 30 years since the adoption of the NTQS. During this time, the Korean economy has advanced from an underdeveloped to a developing one and Korea recently has been admitted into the OECD. Despite the economic difficulties resulting from the mismanagement of the foreign reserve, the miraculous economic development achieved by the hands of Koreans cannot be ignored. From a science-and-technology point of view, the NTQS has been instrumental in this leap forward.

The NTQ Act has been amended 18 times since its enactment, and the main changes are as follows:

The 1st Amendment (December 29, 1975): Presidential Decree No. 7902

1. The related ministerial heads are to report by November 15 of each year on next year's certification exam plans to the Minister of Science and Technology.
2. The registration deadline of acquirers of qualifications is extended from 15 to 30 days.
3. Relegation of rights and authorities regarding certification of some categories:
    - 9 items including Class I Prime Mover Testing Engineer - Minister of Home Affairs→Governor of each province
    - 2 items including Class I Mining Safety Engineer - Minister of Commerce and Industry→Governor of each province
    - 18 items including Class I Precision Mechanical Engineer - Minister of Commerce and Industry→Korea Precision Equipment Center
    - Class II Automobile Repair Craftsman - Minister of Transportation→ Governor of each province
    - 2 items including Class I Electrical Construction Craftsman - Director of Industry Promotion Office→Governor of each province
    - 3 items including Mining Craftsman Apprentice - Director of Labor Office →Korea Mining Promotion Agency

The 2nd Amendment (December 31, 1976): Presidential Decree No. 8357

1. Commissioning of technical qualification certification: Director of Division of Science and Technology→Korea Technical Certification Agency
2. Grading of multiple choice exams: related ministries→Korea Technical Certification Agency
3. Submitting of registration applications of acquirers of national qualification: within 30 days→60 days
4. Rendering of certification fees: through seals (but fees imposed by the Korea Technical Certification Agency are paid in cash)
5. Commissioning of certification authority to the Korea Technical Certification Agency (Commissioned centers: Korea Precision Equipment Center, Ministry of Construction, Ministry of Transportation, Division of Science and Technology, Minister of Post, Industry Promotion Office, Labor Office Director, Electric Wave Director)

The 3rd Amendment (December 31, 1977): Presidential Decree No. 8799

1. Schools under certification requirement: higher technical schools included
2. Announcement of certification exam: 90 days and 30 days before exam date
3. Excluded from commissioning of certification authority: mandatory certification, active soldiers, 5 items including Class II Cable Equipment Craftsman

The 4th Amendment (January 6, 1979): Presidential Decree No. 9278

1. Changes in required skills for Engineer group, Class I Craftsman group
2. 2. Name changes: Junior university, Higher school for Vocational Training, Professional School→Junior college
3. Changes in Mandatory Certification Authority: related ministries→Director of Labor Office
4. Partial changes in qualification items

The 5th Amendment (June 22, 1979): Presidential Decree No. 9509

1. Must notify the Korea Technical Certification Agency upon cancellation of technical qualification
2. 2. Commissioning of national technical qualification management authority

(i.e. registration, handing out registration cards, managing registration cards, etc): related ministries→Korea Technical Certification Agency

3. 3. Notification of technical qualification registration details: Korea Technical Certification Agency→related ministries

The 6th Amendment (December 31, 1980): Presidential Decree No. 10124

1. Abolishment of some mandatory certifications: for graduates of university, junior colleges, and vocational high schools
2. Loosening or abolishment of eligibility requirements for exam application: Class II Engineer - further reductions in restrictions Class II Craftsman → abolishment
3. Extension of exemption for award-winners in skills competitions: only have to take written exam and interview

The 7th Amendment (April 29, 1982): Presidential Decree No. 10802

1. Integration of Business Management certification
2. Exemption of Class II Craftsman group written exam: vocational high schools, Vocational Training Center
3. Change in order of certification of Engineer group: review of credentials, written exam, interview→written exam, review of credentials, interview
4. Question sheet of written exams made public
5. Announcement of national technical qualification exam plans: 20 days before the new year
6. Name change: Korea Technical Certification Agency→Korea Vocational Training Management Agency

The 8th Amendment (December 20, 1983): Presidential Decree No. 11281

1. Loosening of application requirements in Engineer group
2. Considerable changes in technical qualification items: 119 newly created, 126 abolished, 100 integrated into 38, 22 separated into 48
3. Technical Qualification Review Committee: 25→32 members
4. Craftsman Exam: written exam added
5. Exemption period of written exam: 1 year→next 2 tries
6. Certification of Business Management: commissioned to KCCI

The 9th Amendment (November 15, 1984): Presidential Decree No. 11543

1. Stipulation of people subjected to post-qualification education, time, methods
2. Business Management Skills: excluded from registration requirements

The 10th Amendment (July 1, 1987): Presidential Decree No. 12195

1. Change in technical qualification items: 13 newly created, 2 integrated into 1, 1 separated into 3
2. Award winners in National Skills Olympics: exemption when applying for Class I
3. Re-registration of people who deferred post-qualification education: within 1 year of expiry date

The 11th Amendment (December 19, 1988): Presidential Decree No. 12555

Amendment to the Implemental Decree for Awards-deletion of birthplace in application form

The 12th Amendment (March 27, 1989): Presidential Decree No. 12668

1. Change in qualification items: newly created (9 in the Engineer group, 5 in the Craftsman group)
2. Loosening of application requirements: Class II Confectionary Pastry

The 13th Amendment (October 31, 1991): Presidential Decree No. 13494

1. Change in technical field: Engineer 21→22
   Craftsman 15→19
2. Change in items: 36 newly created (Engineer 20, Craftsman 16), 137 abolished, 25 separated into 61, 72 name changes, 62 integrated into 28
3. Certification of craftsmen: added practical exam
4. Loosening of application requirements: Class I, II Engineers, Craftsman goup
5. Changes in certification procedures of different class: written→practical exam (including professional engineer)

The 14th Amendment (July 8, 1993): Presidential Decree No. 13925

1. Loosening restrictions of application requirements in field experience
2. Change in qualification items: 14 newly created, 1 name change
3. Prohibition of more than one exam application in the same item and class

The 15th Amendment (November 10, 1994): Presidential Decree No. 14413

1. Reflection of performance evaluation of students in vocational high schools or vocational training centers during industry- school cooperative training
2. Making possible commissioning of certification to administrative or private sector
3. Creation of Environmental Expert Qualification

The 16th Amendment (October 16, 1995): Presidential Decree No. 14783

1. Change in Qualification items: 24 newly created, 32 were adjusted into 14, 18 abolished
2. Multi-skilled Engineer qualification newly created

The 17th Amendment (October 28, 1996): Presidential Decree No. 15161

1. Change in position of the Construction Electrical Equipment item: construction →railway signs

The 18th Amendment (June 2, 1997): Presidential Decree No. 15384

1. Change in qualification items: 4 newly created, 1 abolished
2. Integration of government ministries: Industry Promotion Office →Ministry of Trade and Industry, Fisheries Office→Ministry of Maritime Affairs and Fisheries

The 19th Amendment(May 9, 1998) : Presidential Decree No.15794

1. Establish expert committee
2. Change the name of qualification grade
3. Set up regulation in relation to the creation of technical qualification items

The 20th Amendment(Feb 5, 1999) : Presidential Decree No.16106

1. Scope of entrustment of business management
2. Designate the technical qualification items to be commissioned to other organizations
3. Change the notice method of the results of testing

The 21th Amendment(Oct. 11, 1999) : Presidential Decree No. 16572

1. Abolish continuing professional development

3. Enactment of the National Technical Qualification System

1) Background

There has been some criticism about the technical qualification system prior to the adoption of the NTQ Act. First, the lack of coherence between the technical qualifications issued by various government ministries and laws according to their particular objectives limits the development of qualified technical workers. Second, the criteria for national technical qualifications are much too complicated and unbalanced, thereby reducing its credibility. Third, the various qualifications authorized by different sources, many of them overlapping in their content, are not being accorded inter-changeability, therefore leading to a waste of time and resources of not only the qualification system operators, but also of those taking the tests. Fourth, the near absence of preferential treatment for certificate holders has worked to deter the incentives of workers to acquire technical skills. Fifth, due to the unorganized system of qualification it has been impossible to keep technical education and vocational training in line with the needs of industry.

2) Objective

By establishing an evaluation scheme of skills and the level of skills, not only may the capabilities of technicians and craftsmen be enhanced, but their social recognition and credibility will also be increased. The social positions of technicians and the utilization of their skills will be enhanced through the spread of preferential treatment for skilled workers who have obtained qualification certificates. Another purpose is to improve technical education and the vocational training system by way of responding to the needs of industry, with these qualified workers as the link. In addition, greater efficiency can be achieved in the management and operation of what is now a sporadic and arbitrary qualification system, which may be conducive to ensuring better and more capable technical workers and also providing human resources support to the national advanced industrialization policy.

3) Basic Principles

Through this system, human resources in the science and technology field, essential in an industrial society, will be classified into three categories: (1) scientists (the so-called brain power), (2) on-site technicians, who are in charge of technical matters in the actual workplace, and (3) craftsmen, whose main duties are manufacturing, assembling, operating, repairing and maintenance. Furthermore, on-site technical workers such as technicians and craftsmen may also achieve equal social, economic status with doctorate-level academics once they obtain certificates in the highest levels of their respective qualification tests. This is designed to enhance the morale and self-esteem of technicians and craftsmen and to upgrade the social positions of technicians and craftsmen.

4) Functions

The qualification system in Korea aims to assess and evaluate the degree of achievement towards a certain goal. Its main functions are to conduct an evaluation of (a) technical skills education and training, (b) special abilities imperative in an industrial society. The Korean qualification system also provides invaluable feedback regarding the qualification system in general and its future direction, which leads to the enhancement of workers' skills. Policy-wise it controls the flow of the supply of industrial human resources.

During the twenty years of the implementation of NTQS, its goal of establishing a working model of certification by integrating into one the scattered standards and criteria has been accomplished. The current impetus must be given to heightening the credibility of certificates and making them more suitable for practical use. The functions of NTQ are suggested as follows; First, individual skills and capabilities should be evaluated according to standard criteria, making possible the supplying of skilled workers as well as providing a direction for human resources development institutions. The economic and social status of technicians will also rise through increased recognition of their abilities. Second, the qualification system must provide a link between the supply and demand of skilled workers, facilitating the smooth flow of labor. Third, it should act as a guideline regarding employment, pay, promotion of individuals and standards for human resources management, especially in an industrial society. Fourth, qualified and skilled workers can be secured and further utilized, contributing to increased productivity and industrial development.

5) Establishment Direction of Qualification Items

At the time of the enactment of the NTQ Act, the main consideration was given to skills related to heavy industry, such as machinery, metal, and chemical engineering, since the basic principle was economic development through the support of heavy industry. The technical education and vocational training policy was planned to suit this purpose, and an attempt was made to integrate the wide variety of certification systems prevalent before. An emphasis was put on making the items for qualification realistic and practical, in order to bring about actual benefits to individuals and society.

The Class I and Class II Engineer items encompass a wider range of skills compared to Professional Engineers and are closely linked to formal education venues. The more specialized Professional Engineers are more suited to specific skills required on-site.

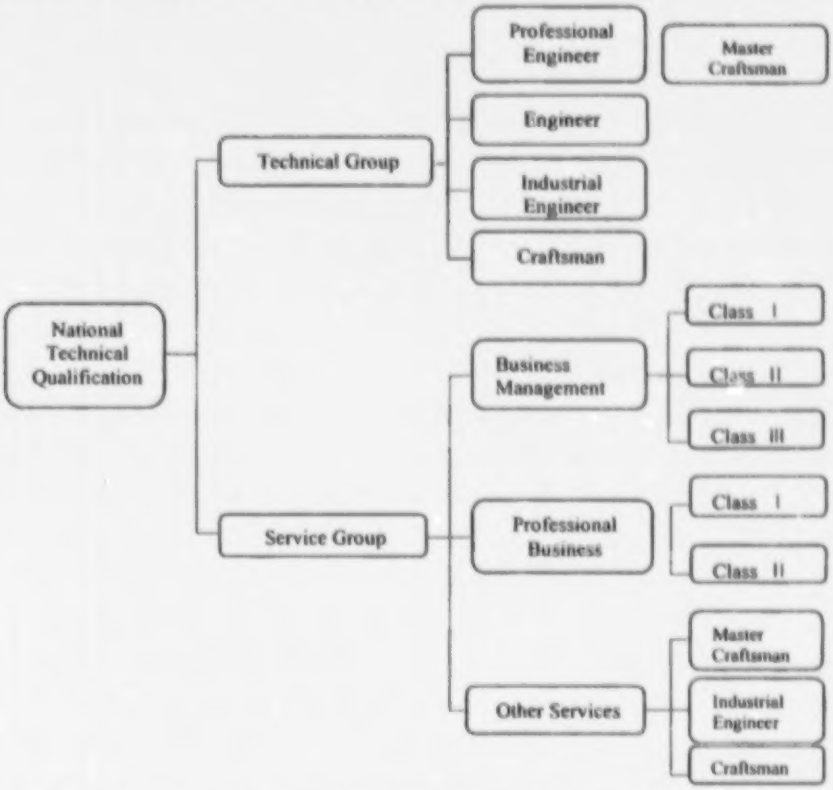
In the Craftsmen group, the range and level of skill expands as an individual reaches a higher rank. The lower rank craftsmen are helped to learn simple crafts in order to be eligible for qualification.

4. The Structure of NTQS

1) Classification

As shown in Figure 4.2, the current national technical qualification system is classified into 5 different levels: Professional Engineer, Master Craftsman, Engineer, Industrial Engineer, and Craftsman. The Service group is divided into Business Management and Other Services. Business Management has 3 levels(geup) and the Other Services group item has under it the two levels of Master Craftsman and Craftsman in 2 fields of work.

Figure 4.2: Classification of National Technical Qualifications


National Technical Qualification
Technical Group
Professional Engineer
Master Craftsman
Engineer
Industrial Engineer
Craftsman
Service Group
Business Management
Class I
Class II
Class III
Professional Business
Class I
Class II
Other Services
Master Craftsman
Industrial Engineer
Craftsman

Source : Cho, Jeong-yoon et al(1998). The Korea Technology Qualification System: New Directions Towards the 21st Century

2) Qualification Categories and items

There are 25 categories in the technical group including machinery, metal, chemical engineering and ceramics, electricity, electronics, communications, shipbuilding, aeronautics, civil engineering, architecture, textiles, mining resources, information processing, land development, agriculture and forestry, industrial design, energy, safety management, environment, applied industries, transportation, pottery, foods, sanitation and the business management categories under the service group.

Under the amendment of the Enforcement Decree there are 590 items of qualification, which are divided into 550 in the technology and skill group and 40 in the service group.

Table 4.1: Number of Qualification Items in the Technical Group of the NTQS

Grade Occupation Category	Total	Professional Engineer	Master Craftsman	Engineer	Industrial Engineer	Craftsman
1. Machinery	118	10	10	15	31	52
2. Metal	48	6	6	7	10	19
3. Chemical/Engineering/And Ceramics	20	5	1	4	5	5
4. Electricity	19	5	2	4	4	4
5. Electronics	13	3	1	3	3	3
6. Communications	20	1	1	4	7	7
7. Shipbuilding	9	3	-	1	1	4
8. Aeronautics	9	2	1	1	1	4
9. Civil Engineering	29	11	-	4	4	10
10. Construction	33	4	2	3	7	17
11. Textiles	30	6	2	4	9	9
12. Mining Resources	16	4	-	3	4	5
13. Information Processing	8	2	-	2	3	1
14. Land Development	11	3	-	3	3	2
15. Agriculture and Forestry	39	6	1	9	9	14
16. Ocean and Fisheries	20	4	-	8	5	3
17. Industrial Design	6	1	-	2	2	1
18. Energy	6	3	-	2	1	-
19. Safety Management	19	7	1	5	5	1
20. Environment	13	4	-	4	4	1
21. Applied Industry	39	6	-	11	8	14
22. Transportation	3	1	-	1	1	-
23. Pottery	22	-	1	-	4	17
Total	550	97	29	100	131	193

Source : HRD Korea(2001). The Guide for National Technical Qualification Testing

The service group is divided into business management, professional business and other services. The category of business management has under it 6 items: word processing, Korean/English shorthand, secretarial work, and computer application and accounting. The qualification levels in the Business Management field are classified into levels 1, 2, 3. The field of professional business has under it 3 items; job counselor, social survey analyst, and electronic commerce. This field is classified into level 1, 2. The total number of categories are shown in Table 4.2.

Table 4.2: Number of Qualification items in the Business Management (Service Group) of the NTQS

Occupation category	Item	Class	Number
Business Management	Word Processing	1-3 *geup*	3
	Korean Shorthand	1-3 *geup*	3
	English Shorthand	1-3 *geup*	3
	Secretarial Work	1-3 *geup*	3
	Computer Applicability	1-3 *geup*	3
	Computer Accounting	1-3 *geup*	3
Professional Business	Job Counselor	1-2 *geup*	2
	Social Survey Analyst	1-2 *geup*	2
	Electronic Commerce	1-2 *geup*	2
Total			24

Source : http://www.korcham.net/kctemple/test.htm

The other services under the service group, previously under the technical service category in the craftsman group, consist of the two fields of foods and sanitation, as is shown in Table 4.3. There are a total of 15 items, 4 in master craftsman, 1 in industrial engineer, and 11 in craftsman.

Table 4.3: Number of Qualification Items in the Other Services Category (Service Group) of the NTQS

Grade Occupation field	Master Craftsman	Industrial Engineer	Craftsman	Number
1. Foods	Cooking Baking	Cooking	Korean Cooking Western 〃 Chinese 〃 Japanese 〃 Shellfish 〃 Confectionary Pastry Bartender	11
2. Sanitation	Barber Beautician		Barber Beautician Laundry	5
Total	4	1	11	16

Source : HRD Korea(2001). The Guide for National Technical Qualification Testing

3) Certification Criteria

The criteria for certification under the NTQS are provided in the following (Table 4.4).

Table 4.4: NTQS Certification Criteria According to Grade

Grade	Certification Criteria
Professional Engineer	Whether or not the applicant has the ability to plan, research, design, analyze, test, operate, construct, evaluate or guide and supervise these activities based on a high level of expert knowledge and field experience
Master Craftsman	Whether or not the applicant has plenty of experience and skills in order to supervise, guide other workers, carry out on-site training, and act as a link between the management and production workers

Engineer	Whether or not the applicant has the ability to carry out skilled tasks such as design, base construction, and analysis based on engineering knowledge.
Industrial Engineer	Whether or not the applicant has the ability to carry out multi-skill tasks based on basic technical knowledge or experience
Craftsman	Whether or not the applicant has the ability to carry out task management duties such as produce, manufacture, operate, repair, and evaluate.

Source : : HRD Korea(2001). The Guide for National Technical Qualification Testing

The certification criteria for business management qualification under the services group, whose testing is executed by KCCI, is as follows:

Table 4.5: Certification Criteria for Business Management (Service Group)

Name	Grade	Certification Criteria
Korean Shorthand	1 *geup*	Possessing expert-level Korean shorthand skills and the ability to carry out related duties with efficiency and accuracy
	2 *geup*	Possessing intermediate-level Korean shorthand skills and the ability to carry out related duties with efficiency and accuracy
	3 *geup*	Possessing beginner-level Korean shorthand skills and the ability to carry out related duties with efficiency and accuracy
English Shorthand	1 *geup*	Possessing expert-level English shorthand skills and the ability to carry out related duties with efficiency and accuracy
	2 *geup*	Possessing intermediate-level English shorthand skills and the ability to carry out related duties with efficiency and accuracy
English Shorthand	3 *geup*	Possessing beginner-level English shorthand skills and the ability to carry out related duties with efficiency and accuracy
Secretary	1 *geup*	Possessing expert knowledge on secretarial work and the ability to carry out related duties with efficiency and accuracy
	2 *geup*	Possessing general knowledge on secretarial work and the ability to carry out related duties with efficiency and accuracy
	3 *geup*	Possessing basic knowledge on secretarial work and the ability to carry out related duties with efficiency and accuracy
Word Processing	1 *geup*	Possessing expert-level word processing skills and the ability to carry out related duties with efficiency and accuracy

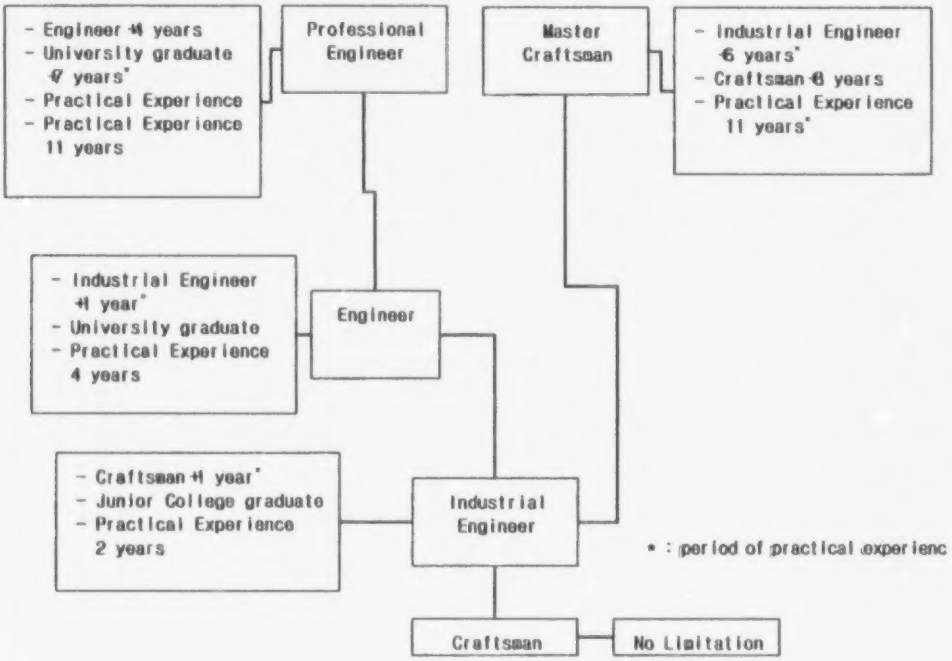
	2 *geup*	Possessing intermediate-level word processing skills and the ability to carry out related duties with efficiency and accuracy
	3 *geup*	Possessing beginner-level word processing skills and the ability to carry out related duties with efficiency and accuracy
Computer Applicability And Accounting	1 *geup*	Possessing expert-level computer skills and the ability to carry out related duties with efficiency and accuracy
	2 *geup*	Possessing intermediate-level computer skills and the ability to carry out related duties with efficiency and accuracy
	3 *geup*	Possessing beginner-level computer skills and the ability to carry out related duties with efficiency and accuracy

Source : : http://www.korcham.net/kctemple/test.htm

4) Eligibility for the Qualification Exam

Figure 4.3 shows the application requirements under the Implemental Decree of the National Technical Qualification Act. Eligibility for the Professional Engineer qualification is given to individuals who have ① acquired qualification as an engineer, industrial engineer, or craftsman and worked in their fields for 4, 6, 8 years respectively, ② graduated from university or junior college and worked in the field of qualification application for 7 and 9 years respectively, ③ completed training at the level of engineer or industrial engineer, ④ had field experience for more than 7 or 9 years or 11 years without having proper formal education, and ⑤ acquired an identical qualification and class in a foreign country.

Figure 4.3: Eligibility for National Technical Qualification


- Engineer +4 years
- University graduate +7 years*
- Practical Experience
- Practical Experience 11 years
Professional Engineer
Master Craftsman
- Industrial Engineer +6 years*
- Craftsman +8 years
- Practical Experience 11 years*
- Industrial Engineer +1 year*
- University graduate
- Practical Experience 4 years
Engineer
- Craftsman +1 year*
- Junior College graduate
- Practical Experience 2 years
Industrial Engineer
* : period of practical experienc
Craftsman
No Limitation

Source : Chung, Tae-hwa et al(1997). Current Status and Reform Direction for the Korean Vocational Qualification System

5) Certification Process

The certification procedures according to each technical qualification field are stipulated in Article 15 of the Implemental Decree. The certification process proceeds in the order of written exam, practical exam, and interview. Each stage of the exam. requires the passing of the previous stage, but if the practical exam is in the form of a written exam, then both stages may occur within the same stage. The certification process of the technical group qualification is illustrated in Table 6.

Professional engineer qualification requires a written exam and an interview, while the categories of Engineer, Master Craftsman, Industrial Engineer require a written and practical exam.

BEST COPY AVAILABLE

Table 4.6: Certification Procedures for the Technical Group

Qualification Type	Certification Procedure	
	Written Exam	**Interview or Practical Exam**
Professional Engineer	Short answers or essay	Oral interview
Master Craftsman	Multiple choice (1 answer out of 4 choices)	Actual performance test+ Written exam
Engineer	Multiple choice (1 answer out of 4 choices)	Actual performance test+ Written exam
Industrial Engineer	Multiple choice (1 answer out of 4 choices)	Actual performance test+ Written exam
Craftsman	Multiple choice (1 answer out of 4 choices)	Actual performance test

Source : Cho, Jeong-yoon(1999). Measures to Improve the Testing Method of the National Technical Qualification System.

The written exam takes the form of essay-type and multiple-choice questions, with the Professional Engineer examinees given short answer and essay questions and others given multiple-choice questions. The cutoff point is 60 out of 100 for professional engineers, master craftsmen, and craftsmen, while engineers and industrial engineers need to attain at least 40 points in each subject with an average higher than 60.

There are 4 types of practical exams: interview, actual performance, written answers, and combined. The interview-type exam applies only to the Professional Engineer class. Actual performance requires the examinee to use certain equipment and tools to design, manufacture, operate, repair, extract, analyze and inspect according to instructions. The written type refers to the short-answer type written exam, and the combined exam consists of both actual performance and the written type. Qualification exams utilizing solely the written version are currently being transformed into combined or performance-type exams in order to enhance the practical skills of qualification acquirers.

The cutoff point for practical and interview exams is 60 out of 100 for the technical group qualification and Other Services qualification. The certification procedures for the Business Management field of the Service Group are shown in Table 4.7. Both written and practical exams are required in secretarial work, word processing, and computer application and accounting, while shorthand is required only for the practical exam. This exam has questions requiring not only theoretical knowledge but actual ability, making the exam closer to the combined type.

Table 4.7: The Certification Procedures of the Business Management Field (Service Group)

Qualification item	Certification Procedure
Secretary	Written exam → Practical exam
Word Processing	Written exam → Practical exam
Shorthand	Practical exam
Computer application	Written exam → Practical exam
Computer accounting	Written exam → Practical exam

Source : : http://www.korcham.net/*kctemple*/test.htm

5. Administration of Certification Process

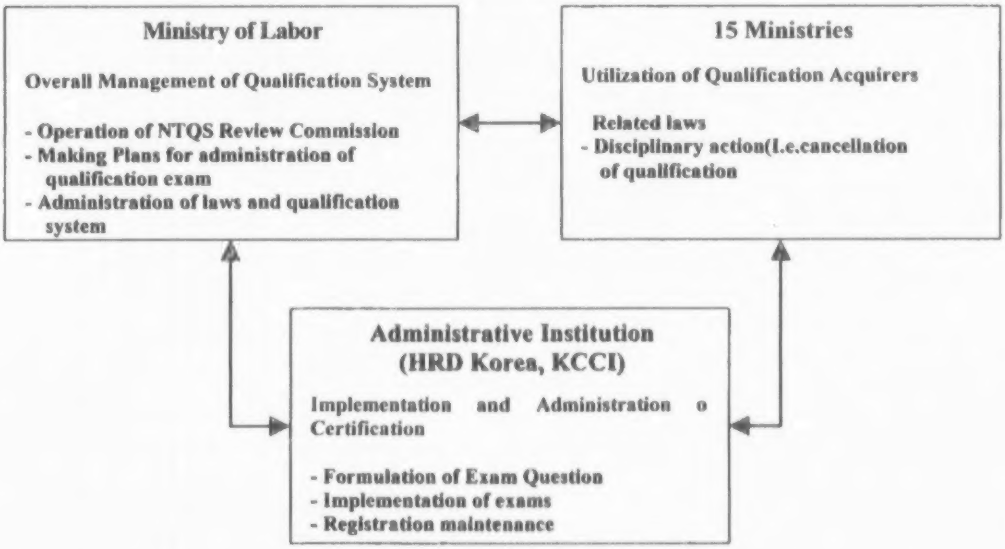
1)Current Operation

National technical qualification is currently under the control of 15 different government organizations, but the overall management is headed by the Ministry of Labor under the NTQ Act. The undertaking of the formulation of exam questions, the certification process, and registration are commissioned to Human Resources Development Service of Korea (HRD Korea) and KCCI under the Implementation Decree of the same Act. HRD Korea is in charge of the Other Services category in the Service Group as well as the Technical Group, while the KCCI deals with the Business Management field in the Service Group. The certification of active soldiers and military personnel is authorized by the Minister of Defense, and the registration, certification, reports of changes, and management of the qualification system of electric wave engineers, industrial engineers, and craftsmen are authorized by the Minster of Information and Communication.

Issues regarding the operation of the NTQS such as the creation, integration, and abolishment of qualification categories, application requirements for each level, certification procedures, qualification exam subjects, adjustments in exam periods, measures for establishing preferential treatment for certificate holders, improvement of the qualification system, exemption conditions, commissioning certification to the private sector, and authorization of private qualification are inquired into by the Technical Qualification System Review Committee, a consultative body under the Minister of Labor consisting of public officials and specialists, and reflected into the national technical qualification policy. The overall operating system of the NTQS is depicted in Figure 4.4.

The NTQS Review Committee is composed of less than 33 members who are either Level 3 or higher government bureaucrats or specialists recommended by the Minister of Labor. The committee also reviews the opening and closing of qualification categories, exam subjects, application requirements, adjustments in exam administration, measures for the establishment of preferential treatment for certificate holders, and general measures for improving the NTQS.

Figure 4.4: The Operating System of the NTQS


Ministry of Labor
Overall Management of Qualification System
- Operation of NTQS Review Commission
- Making Plans for administration of qualification exam
- Administration of laws and qualification system
15 Ministries
Utilization of Qualification Acquirers
Related laws
- Disciplinary action(I.e.cancellation of qualification
Administrative Institution (HRD Korea, KCCI)
Implementation and Administration o Certification
- Formulation of Exam Question
- Implementation of exams
- Registration maintenance

Source : Chung, Tae-hwa et al(1997). Currrent Status and Reform Direction for the Korean Vocational Qualification System

The Ministry of Labor is the main organization that deals with the NTQS and directs policy regarding its operation and adjustments among various authorities. It is also in

BEST COPY AVAILABLE

charge of the 269 categories in technical qualifications, including machinery safety engineer, chemical engineering safety engineer, industrial safety engineer, and carries out the following functions:

① creating and abolishing qualification categories and exam subjects, deciding on the application requirements,

② deciding on various standards, such as certification fees

③ confirming administration plans of the qualification exams

④ operating and finding ways to improve the NTQS, such as promoting preferential treatment for certificate holders, improving the qualification administration system, and post-qualification education.

The 15 related authorities have the right to make plans for implementing exams, to decide on qualifiers, to decide on registration and its cancellation, and to carry out post-qualification education. In addition, they may cancel the qualification of certificate holders if they were achieved through bribery or other dishonest measures.

2) Registration Process following the Acquisition of Certificates

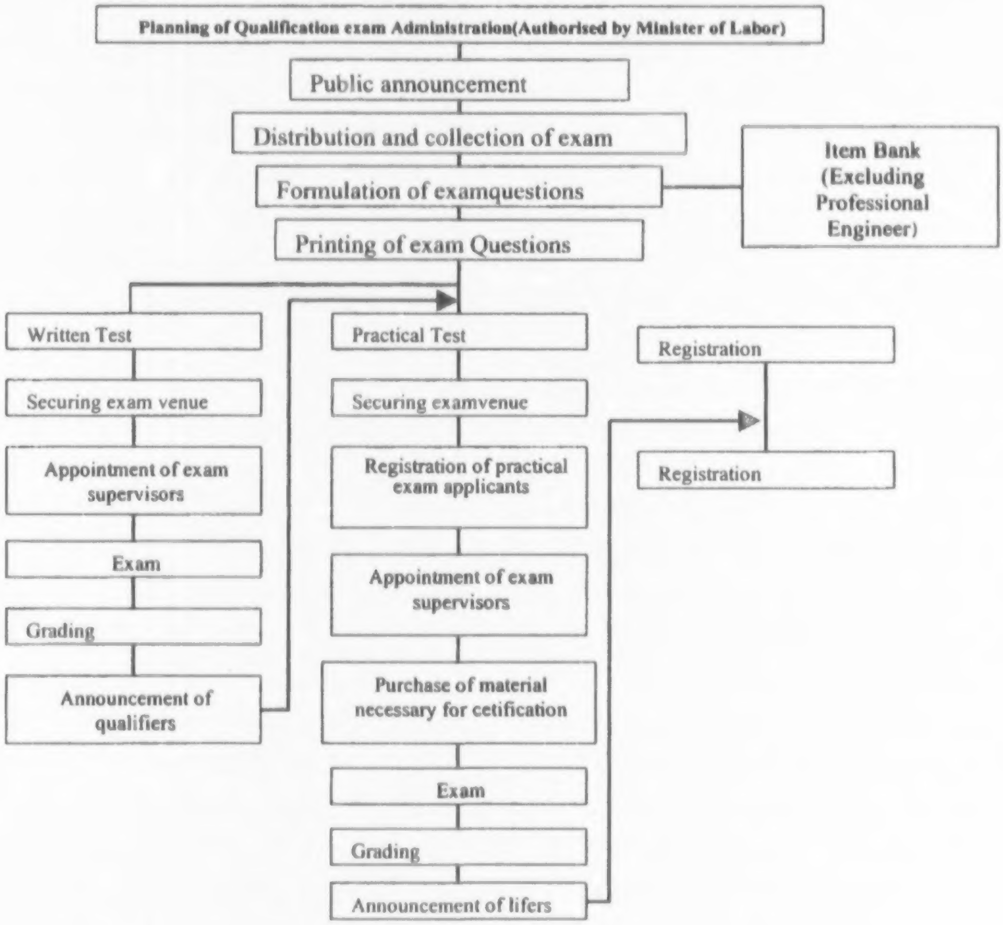
Once an applicant has passed the qualifying exam, he or she is required within 15 days of the qualification announcement to register with the related government ministry, which then hands out the certification in the form of a small notebook.

With the Amendment of the Implementation Decree on December 31, 1976, the registration period was extended to 60 days. If, for some reason, the qualifier was unable to register within the 60 days, then he or she could apply for the certificate by attaching a formal excuse within one year. In 1982, the Korea Vocational Training Administration Agency was established to take care of the registration duties. On December 20, 1983, the registration duties in the Business Management field was commissioned to the KCCI, also in charge of the administration of the qualification exams in the field. On October 31, 1991, following the Amendment, the registration along with the exam administration of wireless equipment Class I, Class II engineers and Class II craftsmen was relegated to HRD Korea.

3) Implementation Process

The implementation of certification is illustrated in Figure 4.5. After the qualification exam is announced, applications are distributed and collected. Once the test centers and test proctors are secured, the written and practical exams are administered. Then the qualifier list is announced and they are required to register.

Figure 4.5 Implementation Flowchart of Certification


Planning of Qualification exam Administration(Authorised by Minister of Labor)
Public announcement
Distribution and collection of exam
Formulation of examquestions
Item Bank (Excluding Professional Engineer)
Printing of exam Questions
Written Test
Securing exam venue
Appointment of exam supervisors
Exam
Grading
Announcement of qualifiers
Practical Test
Securing examvenue
Registration of practical exam applicants
Appointment of exam supervisors
Purchase of material necessary for cetification
Exam
Grading
Announcement of lifers
Registration
Registration

Source : HRD Korea (2001). internal document.

BEST COPY AVAILABLE

6. Formulation and Administration of Exam Questions

1) Formulation of Questions

All exam questions, except for the Professional Engineer qualification categories, are formulated according to certain criteria regarding written and practical exam subjects. Questions for the engineer and craftsman qualification categories are compiled by outside experts, stored in a item bank, and selected randomly from various levels of difficulty. For Professional Engineers, the formulation of exam questions is commissioned to outside experts prior to the exam.

The written exam is in the form of multiple-choice. Examinees in the engineering group take 4 to 6 subjects and receive 20 questions per subject, while those in the craftsman item receive 60 questions per subject.

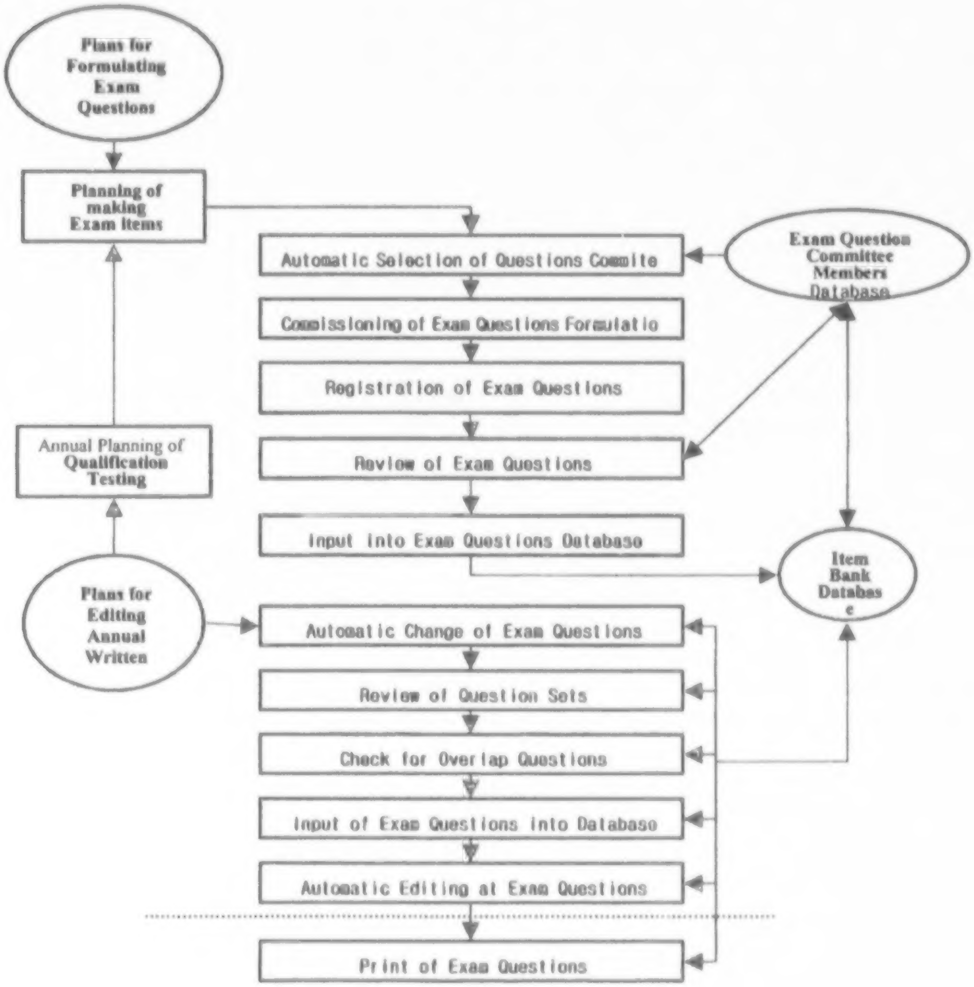
The practical exam is administered as a single comprehensive subject and there is no set number of questions. The exam can take the form of actual performance or a written version (interviews in the case of professional engineer) depending on the item.

2) Operation of the Item Bank

The current national technical qualification exam consists of 2 stages: written and practical. The written exam (1st stage) is in the form of multiple-choice (1 answer out of 4) and the questions are selected from the item bank. The practical exam (2nd stage) can take any of the three forms of the written version, combined, and actual performance. The written version consists of short-answer questions and essay-type questions. The combined version mixes both the written version and actual performance and is used only in the items where, due to lack of equipment, a total performance-type exam cannot be administered. As for the written version, the item bank is used in order to maintain the continuity and safety of exam questions. The item bank is a system that compiles the knowledge and experience of specialists in a computer system for the formulation of exam questions.

HRD Korea did a trial run of the item bank in the 1997 National Technical Qualification written exam and has been operating it since 1998. HRD Korea currently is responsible for 514 items (1525 subjects) and inputs, manages, selects, edits, quantifies, makes, and reviews exam questions through this system.

Figure 4.6: Flowchart of the Exam Formulation Procedure. Questions from the NTQS Item Bank


Plans for Formulating Exam Questions
Planning of making Exam Items
Automatic Selection of Questions Commite
Exam Question Committee Members Database
Commissioning of Exam Questions Formulatio
Registration of Exam Questions
Annual Planning of Qualification Testing
Review of Exam Questions
Input into Exam Questions Database
Item Bank Databas e
Plans for Editing Annual Written
Automatic Change of Exam Questions
Review of Question Sets
Check for Overlap Questions
Input of Exam Questions into Database
Automatic Editing at Exam Questions
Print of Exam Questions

Source : Cho, Jeong-yoon(1999). Measures to Improve the Testing Methods of the National Technical Qualification

There are several advantages in the computer-operated system of national technical qualification written exams, naturally constructing a data base and automating the item bank system. First, duties regarding the making of exam questions such as input, editing, and information searches can be done in a more time-efficient manner. Second, the exam questions themselves and their sets can be selected automatically, and errors in grammar will be directly corrected. Third, the quality of questions will improve, security can be maintained more easily and committee members can conduct their duties in a credible manner.

The management of the Item Bank system by HRD Korea is shown in Figure 4.6.

However, a genuinely computerized certification system would require not only that a question bank be programmed and saved into a computer, but also that the computer hardware and software needed for certification be readily available. Thus the current item bank system operated by HRD Korea cannot be called a truly computerized process of certification. There have been 3 stages in the development of computerized certification: (1) computer assisted testing, (2) computerized testing (CT), and (3) computerized adaptive testing (CAT).

As the above facts show, the current Item Bank system, dealing with the input, management, selection, editing, comfiling of statistics, the actual making of the qualification exam questions and keeping tabs on the review committee members, is merely a support tool in its current stages.

3) Selection criteria of Exam Questions

To determine the selection criteria of exam questions and to determine the scope and level of exam questions, a researcher working at HRD Korea in charge of question selection does a field investigation to get a feel for the current status of technological development. He or she, then makes a preliminary draft of the selection criteria and completes the selection criteria plan following its review by an outside expert. The views of the related authorities of each item are taken into consideration, and the final copy is sent out to each government organization, university, junior college, polytechnic college, high school, vocational school, and technical academy. In addition, the selection criteria are continuously updated following field investigations.

4) Exam Questions

(1) Professional Engineer

A Professional Engineer Certification Review Committee, composed of academics, recommends the exam question formulators and two members for each item are selected.

All members meet before the exam date and agree on the questions for each item. In order to prevent information leakage, the members are to remain segregated until the exam date.

The questions are essay-type so that examinees can be broadly evaluated on their basic practical knowledge as well as expert knowledge based on field experience. Two interviewers are present during the interview exam Evaluation is based on field experience, expert knowledge and applicability of qualification item, general knowledge of qualification item, business management and leadership ability, along with disposition and talent.

Table 4.8: A Summary of Interview Questions for Professional Engineers

Main Item	Point
1. Relevant field experience	30
2. Relevant expert knowledge and applicability	20
3. General knowledge in qualification field	20
4. Management and leadership skills as a professional engineer	20
5. Possessing character of a professional engineer	10
Total	100

Source : Cho, Jeong-yoon (1999). Measures to Improve the Testing Method of the National Technical Qualification

(2) Master Craftsman, Engineer, Industrial Engineer and Craftsman-Written Exam

The written exam is in the form of multiple choice (choosing 1 out of 4 answers). Exam questions are compiled by selected committee members from among academic and industrial experts. Irrespective of the exam period, approximately 30,000 exam questions per year are newly created. Each new question is checked for its relevance to field work, objectivity, and accuracy and is given a unique code according to its item, exam subject, formulation criteria, level of difficulty, and type. Then the question is processed into the computer and stored in the Item Bank.

For the comfiling of the exams, the list of unique question codes are printed out and programmed according to subject. Then three times the number of questions needed for 1 set are selected and stored. During the exam period, the supervisor randomly selects 1 of the 3 sets of exam questions and hands it over to the person in charge of editing, who edits and prints out the exam questions in an isolated area.

(3) Master Craftsman, Engineer, Industrial Engineer and Craftsman-Practical Exam

The same procedures as the written exam are applied until the storing of questions into the item Bank. A trial performance is carried out, if necessary, to test the appropriateness of the actual performance type exam In the case of the written version, the formulation method is identical to the written exam, while the actual performance type exam selects one of the sample questions announced beforehand.

7. Credit Bank System

A "Lifelong Open Learning Society" aims to maximize national competitiveness by making education available throughout the life of individuals and society, expanding time and space restrictions in education. One reform measure to achieve this end is the Credit Bank System, which is being actively pursued by the government. The Credit Bank System seeks to improve upon the limitations of formal education by recognizing the various field experiences and training accumulated by an individual outside the school environment. It also provides motivation for life-long learning to people who have previously had not access to higher education. It was against this backdrop that the Credit Recognition Act was enacted, allowing national technical qualification acquisition to be equated with credits from a formal education institution.

1) Linking Qualifications with Formal Education

The plans for recognition of credits for acquirers of national qualifications within the formal education setting is as follows:

① It needs to be recognized that the courses listed under the NTQS are much more comprehensive than the titles or content of college courses and cannot be matched. Therefore credits given to certificate holders should foremost be in the form of major requirements, and upon completion of these required courses credits may be handed out as general electives.

② The highest number of formal education credits that may be recognized through the acquisition of qualification is 110 for the bachelor's degree and 65 for junior colleges.

2) Credit Recognition for the Technical Group

① Professional Engineers are given 45 credits.
② Master Craftsmen are given 39 credits.
③ Engineers (formerly Class I Engineers) are given 30 credits.
④ Industrial Engineers (formerly Class II Engineers, Multi-skilled Engineers, Class I Craftsmen) are given 24 credits.

3) Credit Recognition for the Service Group

① Level 1 Word Processing is given 12 credits.
② Level 2 Secretarial Work is given 4 credits.
③ Level 1 Abacus Calculation is given 8 credits.

If a certificate holder has 2 or more qualifications in an identical item, then the credits for the highest qualification is granted in its entirety, while the rest of the qualifications are granted 3/4, 2/4, 1/4 of the recognizable credits in order of grade. All decimal points are rounded to the nearest number. However, if lower-class qualifications are acquired after a higher-level qualification then credits are not recognized.

In the case where 2 or more identical-level qualifications with some overlapping subjects are obtained, then portions of the recognizable credits are subtracted with regards to the overlapping subjects. For Class I and Class II Engineers, 3 credits are subtracted for each overlapping subject, and Class I Craftsmen and Multi-skill Craftsmen must forego 2 credits for each overlapping subject.

4) Outcome of awarding degree

As of September 2001, there are 33,702 students enrolled. There had been 5 credit issuances and 2 credit awarding ceremonies. 942 Bachelor's degrees and 2,571 2-year Associate Bachelor's degrees have been awarded through the credit bank system up-to-date, for a total of 3,513 degree recipients. These results are presented in table 4.9. Recently, there is an increasing trend of students being awarded degrees by individual universities. It is clear that the recipients of Bachelor's and 2-year Associate Bachelor's degrees are increasing each year, with the credit bank system.

Table 4.9: Number of Degrees Awarded by the Credit Bank

	1999.8	2000.2	2000.8	2001.1	2001.8	Total
Bachelor's Degree	25	111	143	1,462	942	2,683
Two-year associate Bachelor's Degree	9	539	227	267	2,571	3,613
Total	34	650	370	1,729	3,513	6,296

Source : Korean Educational development Institution(2001). Internal data.

A lot of persons getting degrees from credit banks have heavily relied on the acquisition of National Technical qualifications.

8. Authorization of Private Qualification by the Government

1) Defining Private Qualification

Private qualification refers to a system of qualification administered and operated by the private sector, including non-governmental private organizations and individuals.

2) National Authorization System of Private Qualification

In order to activate the private qualification system, the Korean government enacted the Basic Qualification Act on March 27, 1997. Pursuant to this law, a state-authorized private qualification system, drafted for the purpose of recognizing important and necessary private qualifications through a set of evaluation processes, was introduced. The task of evaluating applications of private qualifications for government authorization which started in full-scale in 1999 was undertaken by the Korea Research Institute of Vocational Education and Training. Now the Basic Qualification Act is going to revise the structure and contents so as to make a supplemental provision for the implementation of authorized private qualification.

3) National Authorization Standards for Private Qualification

To qualify for authorized private qualification, an individual must have the appropriate skills that are in accordance with the fundamental directives of the qualification system as layed out in the Basic Qualification Act. A person must also have had three or more qualification credentials that have been in effect for at least one year up to this date. Certificates from those private qualification applicants with only the most organized operations in the level being considered. In the case of the presence of a similar national qualification, the certification standards, subjects, and eligibility of the private qualification must be identical or at a similar level to those of the national qualification.

4) Preferential Treatment for Workers with Authorized Private Qualification

As provided for by the law stipulating the details of national qualification, workers with authorized private qualifications are to receive the same treatment as workers with national qualifications. Furthermore, the head of a vocational education and training institute may utilize either certificates of national qualifications or private ones as references for admission. In addition, pursuant to the Credit Recognition Act a worker with authorized private qualifications may obtain university and junior college credits for high school graduates and university credits for junior college graduates.

5) Execution Results of Authorization on Private Qualification

7 Ministries had authorized 28 qualification items of about more 200 items of private qualification in 2001[17]. For example, the Ministry of Labor authorized 13 qualification items such as mechatronics, jig and fixture design, computer operation, industrial electronic instrument manufacturing, furniture design etc. The Ministry of Education and Human Resources Development authorized Chinese character recognition capability. The Ministry of Information and Communication authorized information system auditor, internet information searcher and a personal computer application capability test.

The government had set the expiry date for all authorized private qualifications in the range of 2～5 years. Each authorized private institute wishing to extend expiry date should apply for the re-certification within this period.

In 2002 the government is in the process of examining more than 200 private qualification items which need to get authorization from the government. At the end of 2002 the government is going to issue the certificate of authorization to private qualification institutes which can satisfy the criteria set for the authorization of a private qualification institute.

9. Analysis of Test Results of the National Technical Qualification System[18]

Results from the National Technical Qualifications exam from 1974 to 2000, shown in Appendix 3, 4, and 5, give insight into the current status of the National Technical Qualifications System. The attachments include detailed data on the number of applicants, the number of successful applicants, and the rate of success since the first national technical qualification exam.

According to Appendix 3, which shows the overall picture of the national technical qualification exam up to 2000, 29,339,559 people had applied for the exam in five different grades. Applicants for craftsman account for 68.7% of the total, while those for industrial engineer account for 17.6%, with these two combined giving 86.7% of all applicants. If the applicants for the engineer grade are added, the percentage increases to 99.2%. Clearly, these three qualification grades have been the major ones in the national technical qualifications system.

---

[17] http://www.krivet.re.kr

[18] Cho, Jeong-yoon(2001). Reform of National Technical Qualification Items and System.

However, the average success rate stood at only 21.7%, which is quite low. Out of five qualification grades, the success rates for master craftsman and craftsman were the highest, while that for professional engineer was the lowest at 11.03%.

Appendix 4 presents cumulative figures for applicants and successful applicants by job category from 1974 to 2000. For the professional engineer grade, the five job categories of mechanical engineering, electrical engineering, civil engineering, architecture, and safety management attracted the highest number of applicants. For master craftsman, the top four job categories were mechanical engineering, metals, electrical engineering, and food & beverage. For the engineer and industrial engineer grades, the top ten job categories were mechanical engineering, electric engineering, telecommunications, civil engineering, architecture, information processing, land development, safety management, environmental engineering, and industrial application engineering. For craftsman, the top four job categories were mechanical engineering, electric engineering, telecommunications, and food & beverage. Overall, mechanical and electric engineering were most often chosen.

This can be explained by the fact that mechanical engineering has more sub-categories than any other job category, and the qualification in electrical engineering serves almost as a license and so is recognized by law, enhancing the applicability of the qualification in the field. All in all, job categories with a high application rate are those with more sub-categories and those that offer license-like qualifications.

A review of success rates by qualification grade and by job category reveals that the success rate for the professional engineer grade in such job categories as metals, ship-building, aircraft, textiles, agriculture, marine, and energy is in the range of 30~40%, much higher than the average success rate of 21.7%. However, the success rate by job category shows a high variation.

For the master craftsman grade, textiles, mining, and agriculture record a high success rate, ranging from 50 to 100%. For the engineer grade, the success rate is quite low. The top three job categories in terms of success rate are aircraft, marine and energy. However, the success rate of every job category for the engineer grade is lower than the overall success rate for the entire exam, with the exception of marine, with its success rate standing at 24.48%.

Those testing for the industrial engineer grade have a lower success rate than the overall average in most job categories. Textiles, marine, and arts & crafts form the leading groups with higher success rates, but their average is only as high as the overall average of the exam. The success rate for craftsman stands at between 30~50% in such categories as telecommunications, textiles, land development, agriculture, marine, and arts & crafts. As in the professional engineer grade, the success rate for craftsman shows a high variation by job category.

Appendix 5 gives a table showing the number of applicants, the number of successful applicants, and the rate of success by qualification grade, job category, and sub-qualification category from 1974 to 2000. This table compares cumulative numbers of applicants and successful applicants from 1974 to 2000, with the average success rate given for each sub-qualification category.

For the professional engineer, architectural execution, with 49, 856 applicants, took top place in terms of number of applicants, followed in order by civil engineering execution, civil engineering structure, highway and airport. These qualification items belonged to the occupational field of civil engineering and architecture. The order of successful candidates was in accord with the number of applicants because the number of successful candidates was proportionate to the number of applicants. This trends can be at the grade below professional engineer. Raw silk in the field of textiles, with 65%, had the highest pass rate, while fire fighting facility in the field of safety management, with 4.9%, recorded the lowest pass rates.

For the master craftsman, general machining, with 4,119, is at the top, followed in order by motor-vehicle mechanics and welding in terms of the number of applicants. In the grade of master craftsman, there was a linear relationship between the number of successful candidates and the number of applicants. The pass rate of textile machine in the occupational field of textiles was 100 per cent. But the success rate of aircraft maintenance in aviation was only 3.3 per cent, and machinery maintenance in machinery was 5.3 per cent.

The qualification item of engineer grade showing the highest number of applicants was architecture, with 480,636 candidates, followed by information management in the occupational field of information processing. Also civil engineering and electrical work recorded a large number of applicants. The highest pass rate was 39 per cent, which was recorded by machinery maintenance. On the other hand, facility horticulture recorded the lowest pass rate, 3.1%.

In the case of industrial engineer, information management in the occupational field of information processing, with 660, 422 applicants, was the qualification items, showing the highest number of applicants. This was followed in order by electrical work in the occupational field of electricity, architecture in the occupational field of architecture, electricity and civil engineering in the occupational field of electricity. Textile design and fashion design demonstrated the highest rate of success, 55 per cent and 57 per cent respectively. Electrical measuring in the occupational field of machinery and transportation in the occupational field of transportation showed the lowest pass rate, 1.1 per cent and 1.4 per cent respectively.

For craftsman, information processing, with 1,757,311 applicants, took the top place in terms of the number of candidates, followed by beautician, with 1,365,515 applicants, in the field of sanitation, while Korean food cooking and information facility operation ranked third and forth. The highest success rate, 89.7 per cent was attained by marine engine maintenance, followed by fisheries food processing with 86.1 per cent, in the occupational field of applied industry. At the opposite end of the spectrum, textile fabric finishing recorded the lowest success rate at 4 per cent, and gas in the occupational field of the safety management at 7.4 per cent.

10. Cross-Border Recognition of National Technical Qualifications

1) APEC Engineer[19]

(1) Background

---

[19] Department of Science and Technology(1999). The Policy Improvement of Professional Engineers Status based on Globalization Strategies.

After the constructive dismantling of the GATT (General Agreement on Tariffs and Trade), the WTO (World Trade Organization) was launched in 1995. It then enacted the GATS (General Agreement on Trade in Service), which governs the trade of services.

According to the GATS, which limits the cross-border mobility of unskilled workers and immigrants, borders have become meaningless for professional workers whose skills are internationally recognized. The trend toward open boarders for professionals has spread rapidly, so there is now a movement toward liberalizing the trade of professional services. The GATS is currently working on a set of reasonable and transparent regulations that will govern all service sectors. These regulations, to be submitted as recommendations to the WTO, are being based on such general guidelines as "qualification requirements, procedures for screening qualifications, and standards or requirements for professionals should not be obstacles in the trade of services".

Professionals subject to the GATS include not only engineers but also professionals who need country-specific licenses, such as lawyers, CPAs, medical doctors, and architects. Given the different characteristics of vocations, the conditions for mutual recognition will differ from vocation to vocation. However, it is necessary to understand that the mutual recognition of engineers is not just an issue limited to that specific vocation, but is part of a universal trend in the WTO and the GATS.

As of October, 2001, Korea has been promoting the international recognition of Korean engineers' qualifications. Participating in the EMF (Engineers Mobility Forum), a channel for discussions on the global mobility of engineers, Korea is accelerating its efforts to have the qualifications of its professional engineers acknowledged globally. Established and led by a group of advanced countries including the U.S., the U.K., and Australia, the Forum is based on the Washington Accord. The goal of the Forum is to ensure global mobility among those the forum recognizes as international engineers. Among the members of the Forum are Korea, Canada, South Africa, the U.K., Hong Kong, Australia, Ireland, New Zealand, the U.S., and Japan.

Also working on measures to ensure the international mobility of technologists and technicians, the Forum carries out the following tasks.

First, the Forum develops, adjusts, supervises, and promotes standards and/or criteria that can be generally agreed upon, so as to promote the cross-border mobility of experienced professional engineers.

Second, the Forum develops and promotes a strategy to help governments and their authorities administer a non-discriminatory licensing system by promoting better understanding of obstacles hindering such a system.

Third, the Forum promotes the acceptance of its standards and action guidelines.

Fourth, the Forum verifies whether countries are adopting the optimal system of developing and evaluating engineers so as to increase the professionalism of its engineers, and urges those countries not in compliance to adopt the optimal system.

Fifth, the members of the Forum continue their mutual supervision and information exchange through the most proper measures including the following.

- Exchange information and communicate regularly with each other on evaluation procedures, standards, and systems, and on the production of manuals, other publications, and lists of recognized engineers.
- Invite member nations to observe the details of evaluations and other procedures, along with the general operation of the organization.
- Invite member nations to observe meetings, at which governments, committees, and other organizations discuss evaluations and other procedures, along with the general operation of the organization.

In addition, Korea is also participating in the "APEC Engineer Project," led by the APEC HRDWG (APEC Human Resource Development Working Group). Initiated by Australia, the project aims to develop measures to mutually recognize engineers of the region as "APEC Engineers".

In this paper, we will review the progress and current trends of the APEC Engineer Project and identify improvement needs in Korea's current drive toward the global recognition of national qualifications.

(2) Progress of the "APEC Engineer Project"

Under the leadership of the IEAust (Institute of Engineers, Australia), APEC HRDWG is working on measures to mutually recognize engineers of the APEC member countries. The project dates back to May 1996 when the 1st APEC HRD Steering Committee was held in Sydney. In March 1997, the 1st APEC HRD Working Group Committee was held in Bali and, in June 1997, the joint meeting of the 2nd APEC HRD Steering Committee and the 2nd Working Group Committee was held in Melbourne. In 1997, a workshop was held in August and the 3rd Steering Committee in November in the same city of Manila. At the end of 1997, a final report was produced and distributed to APEC member countries.

A series of these activities are being conducted under an intention that the mutual recognition of engineers will be first implemented in member countries who agree with the idea as a result of the APEC HRDWG's work.

The first Steering Committee defined the levels of engineers for mutual recognition; graduate professional engineer or equivalent, experienced professional engineer, and executive professional engineer or equivalent. Here, the model engineer is one in his 30s who started from the first level and has worked for about seven years until he became an independent professional practicing what is legally allowed under the given vocation.

Not surprisingly, the 1st Steering Committee did not spare time for discussing such issues as language problems and the lack of understanding of technology standards facing foreign engineers who move to different countries. However, these issues were later included in the agenda at the meeting in Manila in August, so propositions were made similar to those at the meeting in San Diego participated by member countries of the Washington Accord. The Steering Committee held in Melbourne used the term "APEC Engineer" for experienced professional engineers whose qualifications are mutually recognized. This term has the corresponding meaning to European professional engineer.

Based on the progress of the APEC Engineer Project, engineers of member countries who satisfy the specified education and experience requirements can register themselves as "APEC Engineers". According to the SEA (Substantial Equivalence Agreement), engineers who have finished the registration can start their practice in any country within APEC. The following are the detailed qualifications necessary in order to be registered as an "APEC Engineer".

First, the candidate should be a graduate of educational courses in engineering at recognized programs.

Second, the candidate should prove he has enough field experience to work independently.

Third, the candidate should have at least 7 years of field experience after college graduation.

Fourth, the candidate should have at least 2 years of working in responsible engineering positions out of 7 years.

Fifth, the candidate should have been receiving quality training for continuous professional development.

The SEA is a system designed to prove engineers from different systems reach a vocational capability that can be mutually recognized, so it makes sure the qualifications for mutual recognition are not in contradiction to the member countries' regulations on the legal qualifications.

Once the SEA has settled down, it would be necessary to establish the MEA (Mutual Exemption Agreement). Compared with the SEA, introducing the MEA to APEC member countries would be more difficult. As the MEA is more related to the actual practice by engineers in the foreign countries, the MEA will require tedious negotiations and compromises among member countries.

In addition, the difficulty stems from the fact that MEA needs to be signed by governments. Only when governments sign the agreement, can APEC Engineers practice their engineering profession freely in the signing countries.

Each member country runs its own "APEC Engineer Monitoring Committee" to drive the APEC Engineer Project. They also operate the "APEC Engineer Register", a dedicated body for registering APEC Engineers. The role of the Monitoring Committee is to recognize engineers from various countries as APEC Engineers on behalf of APEC Engineer Coordination Committee, a top decision-making body among countries participating in APEC Engineer Project. In addition, the Coordination Committee approves the Assessment Statement of the APEC Engineer, a kind of assessment criteria used by the Monitoring Committees of member countries for recognizing engineers from different countries as APEC Engineers.

As of October 2001, formal members of the APEC Engineer Coordination Committee are 10 in total including Korea, Australia, Japan, Canada, Hong Kong, Malaysia, U.S., Indonesia, the Philippines, and Thailand. The current scope of the APEC Engineer Project covers 11 engineering disciplines such as civil, structure, geotechnical, electrical, mechanical, environmental, mining, industrial, chemical, information technology, and biotechnology. The scope is expected to expand to cover more engineering disciplines.

The discussions on the SEA among members of the APEC Engineering Coordination Committee are almost completed while those on the MEA have just started. Basically the member countries agreed to implement the MEA through bilateral agreements. However, they do not disregard the possibility of multilateral agreements depending on the situation. At the moment, in principle, Australia and Singapore agreed to allow APEC Engineers to practice in their territories by signing the Free Trade Agreement. In addition, Australia and Japan are engaged in the discussion on the bilateral agreement in civil and structural engineering. Likewise, Korea has already started discussion on the bilateral agreement with Japan in civil and structural engineering.

(3) Future Directions

In the future, mutual recognition of professional engineers is expected to accelerate within the frameworks of the WTO and the GATS. As is well known, countries in North America and Europe have already signed regional free trade agreements. In order to incorporate opinions of Asian countries as well as ours into the WTO and the GATS, the Korean government has pursued a policy of active participation in the APEC, the third potential regional group following the NAFTA and FEANI. At the moment, Australia is playing a leading role in the Asia Pacific region. Given the fact that Australia is still part of the Anglo-Saxon culture that speaks English as an official language, it is necessary for Korea to take the initiative, so non-English-speaking countries can jointly cope with the issue of mutual recognition of professional engineers.

In fact, mutual recognition of professional engineers is already affecting the real economy. For example, when a Japanese electronics manufacturer exports a plant overseas, it does not recognize the goods produced as finished ones if there is no signature attached by a responsible professional engineer. In the construction industry, if a company doesn't have any professional engineers who are internationally recognized, it can not win overseas projects.

For Korea, the export industry is essential for our survival and is the only solution through which we can cope with the current economic difficulties. In order to export goods and plants that are globally competitive and to win consistently overseas construction projects, it is critical to ensure globally recognized qualifications of the Korean engineers.

In this context, it is necessary to develop a national skills standard system which can oversee the acquisition of skills and accreditation of qualifications. Once the system is established, it is also necessary to upgrade requirements for the exam as well as the contents, levels, and forms of the qualification exam to those of the advanced countries. At the moment, as the exam guidelines are not specified, we can expect to experience difficulties in signing bilateral agreements that are required for Korean APEC Engineers' to make inroads into foreign countries. In addition, it is important to improve the quality of engineering education in Korea to a world class system through more accreditation. For this purpose, it is necessary to accelerate some of the activities that have already been started systematically.

2) Mutual Recognition of IT Qualifications between Korea and Japan [20]

In September 2000, the two leaders of Korea and Japan adopted a "Declaration on IT Cooperation Initiative," in which they agreed on 8 agenda including cooperations on e-commerce and exchange of IT human resources. As of July 2001, based on one of the 8 cooperation agenda, "Cooperation on Promoting IT Manpower Exchange," the two countries are working on measures to mutually recognize IT qualifications.

In April 2001, the Korean delegation visited the JITEC (Japan Information Technology Engineers Exam Center), a prime organization administering national IT exams, and had working-level discussions with its Japanese counterparts on how to pursue mutual recognition of IT qualifications. Through the discussions, the delegation finished the research on the qualification systems, and the contents and some detail characteristics of the systems of two countries. Currently, the two countries are almost at the end of the preliminary stage, having reached a basic agreement on the scope and level of mutual recognition.

---

[20] Cho, Jeong-yoon(2001). Mutual Recognition of IT Qualification between Korea and Japan. Vocation and Human

(1) The Significance of Mutual Recognition of IT Qualifications between Korea and Japan

The implications of the mutual recognition of IT qualifications between Korea and Japan are quite significant because of the following reasons. First, it is the first event in the history of Korea that Korea's national qualifications are officially recognized based on the mutual recognition agreement. Though the signing parties of the agreement are not the governments of the two countries, nevertheless they represent the two governments as they both are national qualification exam authorities entrusted by the respective governments under their consent. Second, given that this agreement is with Japan, one of the most advanced countries, the contents of the agreement will positively affect agreements on mutual recognition of qualifications Korea will sign in the future. In fact, informal contacts are being made between Korea and Japan to discuss the mutual recognition of APEC Engineers in civil and structural engineering. Considering this, the mutual recognition of IT qualifications will set the standard for coming mutual recognition agreements in other fields.

Third, with rapid globalization, the borders between countries in the service market are rapidly collapsing. Especially, the pace of the cross-border exchange of people in IT is being accelerated as advanced countries' need for IT human resources increases in the international labor market. Under these circumstances, in order to achieve competitive advantage in the trade of services, it is necessary to align our national qualifications with the international standards. The mutual recognition of qualifications with Japan, who has already restructured its IT qualifications system and standards to be aligned with the internal standards, will provide an opportunity for Korea to better position its national qualifications system in the international society and to even export its qualification system to the third world countries. Fourth, it will lay the foundation for the proper treatment of Korean IT engineers when they became expatriates. On the other hand, it will also help Korea develop national standards that can attract skilled foreign workers who can support Korea's development of its high tech industries. Once these national standards are developed, they will be used as a baseline for deciding appropriate compensation levels for imported workers and, thus, these national standards will develop into international standards.

(2) The Structure and Contents of IT Qualifications Examinations in Japan

The IT qualifications exam program was first introduced back in 1969. With the request for another major restructuring of the qualifications exam program in 1994 by the Industrial Structure Council, Japan launched a new qualifications system containing new descriptions and levels of qualifications based on the technology standards of the U.S. in IT. Japan defines the role of IT to be reducing production cost and speeding up the delivery of service. The country also recognized the importance of IT considering it as an essential element promoting efficient cooperation between companies and the creation of new industries. Believing that the success of a company will be heavily dependent on the quality of human and physical investments in IT systems, Japan perceives the development of talented engineers who can develop and apply IT systems to be a national priority.

Because of all these efforts, the Japanese IT education centers are now capable of providing education courses that are aligned with international standards. In the case of IT certification, the Japanese authorities are able to evaluate and certify IT competences based on international standards. Hiring employees qualified in terms of international standards, Japanese companies are laying the foundation for reinforced competitiveness. In addition, the Japanese government can assess the level of its IT labor market from the perspective of international standards.

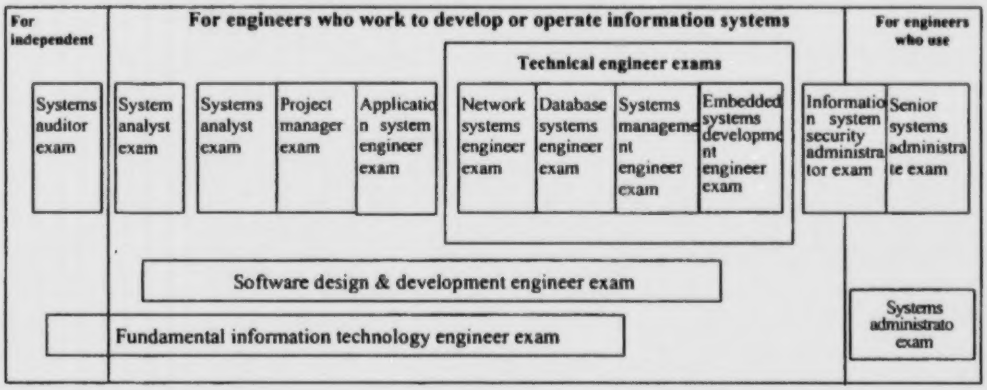
The following is an observation on how Japan has restructured its IT engineer qualifications exam system to create this favorable environment.

First of all, Japan enacted the "IT Promotion Law" to achieve the following objectives; a) improve knowledge, skills, and competencies of IT engineers by presenting specific levels of qualifications, b) let IT engineers lead education and training with the objective evaluation of skills they have learned, c) provide objective criteria for evaluating IT engineers, and d) change the mind-set of the Japanese people, so that they can properly respond to the changes of the information society.

To achieve these objectives, the IT qualification exam system has been restructured as shown in the Figure.

As is shown in the Figure 4.7, in Japan, IT engineers are classified into independent engineers, engineers who develop and operate IT systems and engineers who use IT system. The IT qualification system was established to supply engineers in the respective areas where these engineers are needed. Within the overall framework of the IT qualification system, "Fundamental IT Engineer Exam" and "Junior System Administrator Exam" are developed as introductory exams.

Figure 4.7: Structure of the Japanese IT Qualifications System and the Role of Engineers


For independent
For engineers who work to develop or operate information systems
For engineers who use
Technical engineer exams
Systems auditor exam
System analyst exam
Systems analyst exam
Project manager exam
Applicatio n system engineer exam
Network systems engineer exam
Database systems engineer exam
Systems manageme nt engineer exam
Embedded systems developme nt engineer exam
Informatio n system security administra tor exam
Senior systems administra te exam
Software design & development engineer exam
Fundamental information technology engineer exam
Systems administrato exam

Source : Japan Information Processing Development Corporation/Japan Information-Technology Engineers Exam Center(2001). Information Technology Engineers Exam

The two pillars of the Japanese IT qualifications exam system, the ITEE (Information Technology Engineer Exam) and the ITESS (Information Technology Engineer Skill Standard) are interrelated as follows.

Table 4.10: Interrelations between the ITESS and ITEE

ITESS		ITEE
1. key activities	↔	1. roles and jobs
2. skill criteria	↔	2. expected technical levels
3. body of knowledge	↔	3. scope of exam

Source : http://www.cait.jipdec.or.jp

BEST COPY AVAILABLE

ITESS basically consists of four major areas including common knowledge in addition to the three areas specified in the table. First, key activities include tasks and job outline. Second, job performance criteria includes job, job performance indicator, requirement knowledge, and required skill. Third, the scope of knowledge can be defined in a three-layer structure, a major, an intermediate, and a minor classification. Fourth, the scope of common knowledge is also structured in three layers such as a major classification, an intermediate classification, and major technical items. The following table shows the areas of common knowledge covered by different IT qualification exams in Japan.

Table 4.11: Common knowledge areas covered by different IT qualifications exams

Exam category Field	**Application systems engineer Project manager Systems analyst**	**Software design & development engineer**	**Technical engineer**			
			Network	**Database**	**Systems management**	**Embedded systems**
Computer science		○ III				
Computer system	○ II	○ II	◎ II	○ II	◎ II	◎ III
System development and operation	◎ III	○ II	○ II	○ II	◎ III	○ II
Network technology		○ II	◎ III		○ II	○ II
Database technology		○ II		◎ III	○ II	
Security and standardization	○ II	○ II	○	○ II	○II	○ II
Computerization and management	◎ III					
Audit						

Exam category Field	**Information systems security administrator**	**Senior systems administrator**	**Systems administrator**	**Systems auditor**	**Fundamental information technology engineer**
Computer science					○ II
Computer system	○ II	◎ II	○ I	○ II	○ I
System development and operation	○ I	○ II	○ I	○ II	○ I
Network technology	○ II				○ I
Database technology					○ I
Security and standardization	◎	○ II	○ I	○	○ I
Computerization and management	○ II	◎ III	◎ I	◎ II	○ I
Audit	○ II			◎ II	

Source : http://www.cait.jipdec.or.jp

BEST COPY AVAILABLE

Some symbols are adopted to indicate the importance of the areas in common knowledge. For example, '○' is used simply to indicate the relevant areas while '◎' refers to important areas. Also the Roman numerals are used to indicate the level of skills required, for example, ' Ⅰ ' for the low, "c" for the intermediate (including area 'I' also) and 'III' for the highest (including areas of 'I' and 'I'I).

(3) Improvement Needs

Based on the observations of the Japanese IT qualifications system, we have identified some improvement needs essential for reaching a mutual recognition of IT qualifications with Japan.

First, it is necessary to develop a national skills standard system that corresponds to the national skill levels defined by international standards. With the current national qualification exam system and its contents and forms, it will be difficult to negotiate the mutual recognition of qualifications with advanced countries on an equal stance.

Second, it is necessary to develop new qualifications that can serve the emerging needs of industry by restructuring the current IT qualifications. Considering the expected technological advancement in IT, it will be reasonable to change the current IT qualification system into a more future-oriented one. In this process, an appropriate role split between the public and private sectors should be ensured.

Third, when setting structures, contents, and levels of different IT qualifications, it is required to perform job analyses. This will ensure the contents and levels of IT qualifications exams are based on the national skills standards.

Fourth, it is necessary to build an infrastructure for the national qualification exams including the introduction and development of on-line exam and automatic scoring systems that are already being operated by qualification examiners in the private sector. Building an infrastructure is important as a way to improve the services to applicants for the qualification exams.

Fifth, it is necessary to establish a system for close cooperation between the government, industry, education and training institutes, and the labor community in order to meet international standards and align the education and training programs to the needs of industry. This cooperative system is urgently needed to ensure the global recognition of Korean qualifications.

11. Current Efforts on Upgrading the National Technical Qualification System

First, the government is trying to reform the national qualification system in terms of meeting demands from industries. So as to do this, the government is preparing the policy for integrating and modifying certification items, and developing new qualification items, especially in the area of Information and Communication Technology (ICT).

Second, policy for activating the private qualification market is developing now. The government is introducing this kind of policy in order to expand the authorization of private qualifications and support an in-firm qualification system. Also the government has a plan to delegate the authority for implementation of national technical qualification to private institutes so as to diversify the testing centers in terms of upgrading the speciality of national technical qualification items.

Third, policy for strengthening the linkage between vocational education and training and the qualification systems should be implemented. This linkage should be based upon the demands of industries making efforts to survive in the era of globalization. To support these efforts the government is preparing an Act which will set up national competency standards, similar to those already introduced the advanced countries, such as the U.K., Australia and so on.

Fourth, policy for recognizing the assessment results on vocational competency should be reinforcing. We are going to expand the credit bank, introduce an accreditation system of key skill programs and recognize an apprenticeship as an academic career, especially in the area of traditional arts and culture.

Finally, the government must try to strengthen the international transferability of national technical qualifications. So as to carry out this policy, we are participating in the APEC Engineer Project and preparing mutual recognition of qualifications with

Asian countries in the field of ICT.

South Africa

1. Historical Context

The National Qualifications Framework (NQF) of South Africa can be said to have originated from the labor movement of the early 1970s. Based on the recognition that skills development was an imperative step toward securing better wages, workers and union officials sought a national system of training recognition. Such a proposal put forward by the National Union Metalworkers of South Africa (NUMSA) was formally adopted by the Congress of South African Trade Unions (COSATU) in July 1991.[21]

Also in progress by the mid-1970s were nation-wide calls for educational reform, resulting in a People's Education movement involving students, teachers, parents and community-based organizations such as unions, churches, women's organizations, etc. This was further ignited by various demands for reform by the non-governmental education sector, including student protests, such as the Soweto student uprising of 1976. Some of the problems in schooling identified by the anti-government resistance movement were the segregated and unequal system of education, curriculum and materials which were irrelevant to the lives and needs of South African learners, authoritarian decision-making structures, teaching methods which "domesticated" learners, and the role of schools in reproducing an inequitable society.[22] The People's Education movement promoted widespread discussions and consultative conferences with the aim of presenting alternatives for a future vision of a "just and democratic" society.

Such efforts led to the formation of the National Education Policy Initiative (NEPI), which, in conjunction with COSATU, developed proposals for restructuring the formal education system. Ensuing studies by the Center for Education Policy Development (CEPD) produced various policy initiatives, which developed the idea of a national framework of qualifications.

A second wave of challenge to the existing education and training system came from the business sector, which became increasingly concerned with the lagging level of workers' skills unable to meet the demands of the South African economy. As a corollary to such demands, transformations were taking place on a larger scale in terms of the nature and organization of work. As "craft" trades shifted to mass production, industries began to produce standardized products, leading to changes in the knowledge and skills required of workers. No longer was the problem simply one of a shortage of skilled labor; rather, the technological advancements and market demands required that workers should be lifelong learners, constantly keeping up to date with developments in their field of expertise.

---

[21] South African Qualifications Authority, *The National Qualifications Framework: An Overview*, February 2000, p. 4.

[22] National Training Board & German Technical Co-operation, Final Report of the *Education, Training and Development Practices Project*, October 1998, p. 13.

Other emerging issues had to do with industrial relations. There was a lack of labor mobility and transferability of workers' qualifications because the knowledge and skills acquired from a particular job experience were not formally recognized when changing jobs. Thus, the inadequacy of past qualifications in evaluating a workers' competence became apparent, necessitating the development of a formal nation-wide qualifications framework. Against this backdrop, both employers and unions sought "explicit statements of the criteria by which particular qualifications are issued, which could be linked (in part or in full) to existing job grades."[23]

In the post-apartheid era, the Department of Manpower began launching a series of initiatives, represented by the attempt to restructure the apprenticeship system into a competency-based modular training system run by autonomous industry training boards. This proposal was initially rejected by the unions on the grounds that the reform plans excluded basic education—which the workers viewed as the key to skills training—from their agenda. Following the lobbying efforts by the business sector, a task force was created in 1992 to develop a new national training strategy. Employers and unions alike focused their attention on an "outcomes-based" approach, which had been adopted as the mechanism for reform and provision of industry training in several other countries. Thus, a broad consensus was reached on the need for a National Qualifications Framework (NQF).

Some concerns shared by each of the stakeholders—employers, unions, and government—about the transformation to a NQF included the changing purpose of education and training in South Africa. It is pointed out that in the future, education and training should "equip learners to think critically and creatively, to pose and solve problems, to work with one another, to become independent and lifelong learners. They need to promote the values of active democratic participation, non-discrimination, and collective action."[24]

Another common concern involves improving the quality of education and training. In terms of how much learning and what kind of learning actually takes place, it is widely accepted that the quality of education and training is highly uneven in South Africa. This is due to the uneven distribution of resources, the breakdown of "the culture of teaching and learning," the lack of professionalism and the inadequate preparation of educators and trainers for their jobs.[25]

The third major issue is one of linkage—within and between the education and training systems as well as with their environment. For instance, fragmentation has been prevalent in education and training, with 15 different ministries of education, 19 organizational departments of education and more than 10 departments of labor. There has also been a separation of mental and manual labor, as reflected in the curricula and qualifications of universities and technikons, schools, technical colleges and workplace training programs.[26] This has led to inflexible labor markets, in which workers could not move between institutions and learning programs, ultimately reproducing race and gender inequities.

To overcome these difficulties, an overall policy framework dubbed the Reconstruction and Development Program (RDP) was adopted by the government following the 1994 elections. Reflecting a particular model of social democracy and a strategy of social and economic development, the RDP envisioned economic growth achieved through a re-distribution of the country's resources, in infrastructurual and human resources development programs. Education and training were to support the achievement of a participatory democracy and a growing economy. A strong focus has been put on linking education and training to broader social and economic initiatives in accordance with the RDP principle of "integration," where efforts in one area would be coordinated with efforts in other areas. Most importantly, however, the RDP provided a policy framework for the development and implementation of a National Qualification Framework and proposed the establishment of a South African Qualifications Authority (SAQA) to that end.

---

[23] *Ibid.*, p. 15.
[24] *Ibid.*, p. 16.
[25] *Ibid.*, p. 17.
[26] *Ibid.*, p. 17.

The South African Qualifications Authority Act was passed on October 4, 1995, with its objectives stated as follows:

- To create an integrated national framework for learning achievements;
- Facilitate access to, and mobility and progression within education, training and career paths;
- Enhance the quality of education and training;
- Accelerate the redress of past unfair discrimination in education, training and employment opportunities;
- Contribute to the full personal development of each learner and the social and economic development of the nation at large.)[27]

The enactment of the SAQA Act was followed by implemental decrees on the establishment of the National Standard Body (NSB), the Education and Training Quality Assurance Body (ETQA), and the Standard Generating Body (SGB) in 1998, setting in place the new framework for national qualification. The SAQA was established, modeled after the Qualification and Curriculum Authority (QCA) in the U.K., where the QCA acts as the central institution for nurturing workers with skill levels suited to industry demand.

2. Introduction to New Qualification System(NQF)

1) Barriers to Learning and Development

The key barriers to learning and development in South Africa can be located within (a) the learner, (b) the center of learning, (c) the education system, and (d) the broader social, economic, and political context.[28] These factors have led to learners dropping out and also the exclusion of large populations of the workforce, symptomatic of a "learning breakdown." For instance, it is largely estimated that only 20% of the majority black population are employed. Most of the unemployed are black, and over half are female. Moreover, the level of workers' skills are unable to meet industry demand, leading to low productivity, a low standing in international competitiveness, and labor immobility.

---

[27] South African Qualifications Authority, pp. 5-6.

[28] Department of Education, *Quality Education for All: Overcoming Barriers to Learning and Development*, Report of the National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS), April 1998, pp. 12.

The most widely-cited source of this nation-wide malaise is the socio-economic rift, clearly visible in the South African society at large. Social inequalities, such as disparities between urban and rural areas as well as gender and race discrimination, are prevalent. This has led to limited access to basic services, including educational facilities, especially in poor communities.

Discriminatory attitudes and policies have also hindered learning and development. For learners, being labeled as "dropouts" or "slow learners" have led to further marginalization. Systemic problems exist as well, in the shape of inflexible curricula that are unable to cater to the diverse needs and levels of learners. Other barriers include communication breakdown, unsafe learning environments, inappropriate support services, lack of protection for the disabled, and a lack of long-term human resource development strategies.[29]

The lasting effect of these barriers on the South African economy—and society as a whole—are evident in the remedies outlined by the Ministry of Labor. By 2004, the government hopes to achieve promotion of equity; a demand-oriented qualification system; flexibility and decentralization; partnership and cooperation among the various sectors, such as the government, industry, and local communities; efficiency and effectiveness.

South Africa is currently experiencing a shift in thinking from education for employment—developing the ability to do a specific job—to education for employability—developing the ability to adapt acquired skills to new working environments. This change in perception is leading to a broader transformation: toward a longer-term HRD vision for life-long education through an accumulative credit-based qualification framework rather than the previous pass-fail system. As an indicator of success, by 2004, the Ministry of Labor aims to have at least 15% of the workforce progress one level on the NQF and 70% of all workers to possess a Level One qualification.[30]

---

[29] *Ibid.*, pp. 12-19.

[30] National Skills Authority, *Towards A National Skills Development Strategy*, Draft Consultation Document, October 2000, p. 8.

2) Current Situation

As alluded to in the previous section, social inequalities resulting from apartheid and economic deprivation have had a significant impact on the education system in South Africa. Such high levels of political and economic instability have "rendered a large number of children and adults extremely vulnerable to sustained exclusion or to ongoing learning breakdown."[31] The problems are especially acute for "learners with special needs," as many portions of the unemployed population are labeled.

For analytical purposes, the issues faced by South African policymakers in education and training can be divided into three strands: cultural, socio-economic, and institutional. While cultural tendencies such as prejudiced and discriminatory attitudes and socio-economic disparities between urban and rural areas cannot be ignored, the sources of underdevelopment of workers' skills are heavily weighted toward the institutional factor. According to assessments made by the Department of Education, there are at least eight vital indicators of the less than adequate institutional capacity of the South African education and training system.[32]

The first set of problems can be identified in the provision and organization of education. For instance, not only are facilities for early childhood development (ECD) lacking, the ECD sector as a whole has traditionally been excluded from coordinated education support services offered by the various departments of education. In addition, there are indications that many children, especially learners with disabilities, still remain outside the formal education system despite the introduction of compulsory education. Although national and provincial legislation has made provision for "special needs education" at the respective levels, in reality, such education has only been taking place at the primary school level—in a limited context at that.[33] As for adults, it was estimated in 1995 by the Ministry of Education and Human Resources Development' Four Year Implementation Plan for Adult Education and Training that some 11,145,084 people needed basic education and training. Yet, during the same year, only 258,967—or 2.3 per cent of the potential trainees—enrolled in ABET (Adult Basic Education and Training) programs. As reported by the Department of Education, such a mismatch between supply and demand suggested by these figures reflects significant inadequacies in educational provision at this level. Another report by a national committee has recognized that existing provision for further education and training is inadequate to meet existing needs, while learners who have previously experienced barriers to learning and development had few opportunities for receiving higher education.

---

[31] Department of Education, *Op. cit.*, p. 23.
[32] *Ibid.*, pp. 23-40.
[33] *Ibid.*, p. 24.

Other barriers involve an inadequate and inappropriate assessment of a learner's need, where the placement of a learner occurs according to the attachment of a label rather than by an assessment of learner and system needs. For instance, in the past, most of the racially segregated departments of education conducted large-scale administration of various standardized and routine group tests, often without questioning the corresponding benefits. The inflexibility in curricula has also led to "learner failure," where as many as 18.2% of the learners enrolled in schools repeat grades 1 to 3.

The organization and governance of the education system presents another problem where the centralization of the system of education governance during the apartheid era has led to restrictive centralized control inhibiting change and initiative. In addition, a major factor constraining effective human resources development of educators and other personnel has been the absence of effective monitoring of performance or inappropriate processes for assessing merit. Inadequate and fragmented funding has also added to the long list of institutional shortcomings recognized as the main problems behind the system of education and training in South Africa.

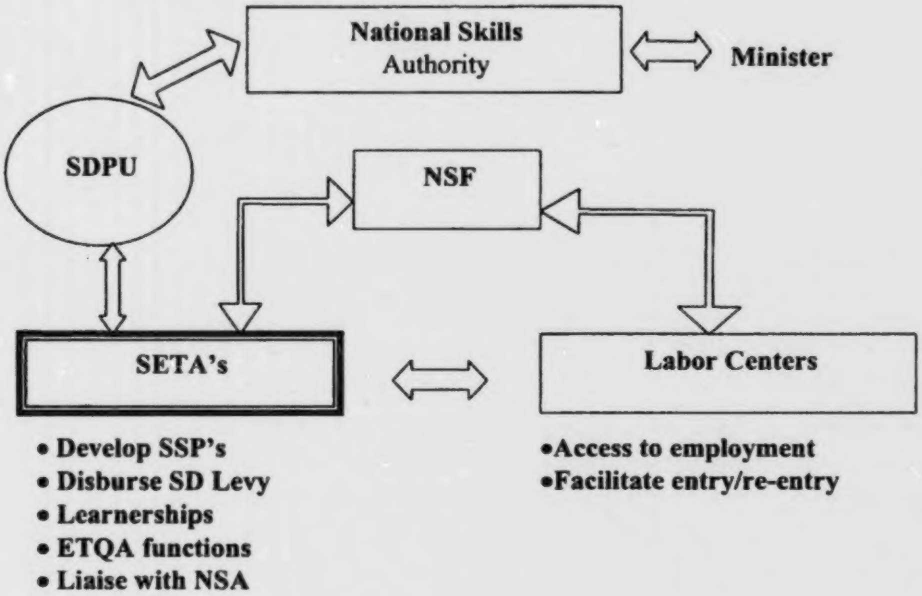
Thus, it is reasonable to believe that the move for reform in education and training policy in South Africa is based on the assumption that institutional capacity building is the key to overcoming barriers in learning and development. At the center of these initiatives are the series of legislation associated with the NQF that have been introduced into the education and training system in South Africa, starting with the SAQA Act in 1995.

As stipulated in the SAQA Act, the SAQA is entrusted with the role of overseeing the current NQF. The SAQA is a body of 29 members appointed by the Ministers of Education and Labor. Its essential functions are twofold: (1) to oversee the development of the NQF through accreditation of bodies responsible for establishing and monitoring education and training standards or qualifications; and (2) to oversee the actual implementation of the NQF by registering national standards and qualifications on the framework and also by ensuring that the various bodies are carrying out their assigned functions. The responsibilities of the SAQA can be categorized under the headings of standards setting and quality assurance. Charged with the registration of NSBs and SGBs, the SAQA is an indirect overseer of the standards generating process. The SAQA is also involved in the assurance of quality in the NQF by accrediting ETQA bodies, which are primarily responsible for accrediting providers of education and training standards and qualifications registered on the NQF.

In addition to the changes initiated by the Department of Education, the department of Labor also introduced new legislation, such as the 1998 Skills Development Act (SDA), to develop a new NQF. Prior to the SDA, assessment was administered by the Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (INDLELA), which began as a technical college under the Procurement Office during the Second World War. In 1990, the Manpower Training Act of 1981 was revised as the Manpower Amendment Act, which led to the establishment of the Industry Training Board (ITB). The ITB was charged with all training-related matters, thereby designating the responsibility for workers' training to firms. With this law, standard setting duties were moved to the 28 ITBs from the INDLELA. This had the effect of reinforcing the role of the industry in education and training. The SDA seeks to assure industry participation by assigning a central role to the Sector Education and Training Authority (SETA) in the education and training of workers. The SETA, as mandated by the Development of Labor, is responsible for not only overseeing education and training in their industry sectors, but also quality assessment, registration of qualifications, and designing and implementing sector skills plans.

Several executive units were established to give effect to the SDA such as the SDPU, learnership, skills funding and National skills Authority etc. SDA has the following structure in order to achieve it's aims.

Figure 4.8. Organizational Structure under SDA


National Skills Authority
Minister
SDPU
NSF
SETA's
Labor Centers
• Develop SSP's
• Disburse SD Levy
• Learnerships
• ETQA functions
• Liaise with NSA
•Access to employment
•Facilitate entry/re-entry

*SDPU : Skills Development Planning unit
SSP : Sector Skills Plan
NSF : National Skills Fund
Source : The Learning Network SA, 2000

Here, NSA has two key functions. First, it facilitates entry into employment through the Labor centers. The Labor centers provide access to employment skills training for first time job seekers and try to put skilled, but unemployed, people to work. Second, this authority promotes and manages national skills development. This is managed through the sector Education and Training Authority (SETA) structure indicated in the diagram above. Also SETA's role can be summarized in line with Figure 4.8 as follows;

1) Develop sector skills plans. They do this by consolidating individual member skills plans, and formulating a plan for the sector. In this they are supported by the

research unit (SDPU).

2) SETAs must disburse the Levy as collected by the SARS, but is disbursed by the SETAs to member organizations that have fulfilled the criteria.

3) Third, SETAs must investigate and manage Learnerships, which are work-based training schemes aimed at providing practical learning and work experience under employment conditions.

4) SETAs must establish and maintain good relationships with the National Skills Authorities. They provide key links between enterprises and the state and should align skills development efforts.

5) Significantly, SETAs will also take over the ETQA roles of SAWA. Put another way, SAQA will accredit SETAs to perform the quality assurance roles envisaged as part of the outcomes-based system.[34]

Acting as a policy coordinator and strategic planner, the SDPU carries out the following functions:

- facilitate, coordinate, monitor and evaluate Skills Development Strategic Planning (SDSP);
- develop, monitor, and evaluate a Skills and Occupational Classification Matrix;
- develop a long-term national skills strategy and present to National Skills Authority (NSA);
- develop annual priorities and targets and present to NSA;
- develop Sectoral Skills Plans and Provincial Plans guidelines;
- assist with the design of skills needs analyses and training plan techniques;
- assist with planning process, consolidate plans and present to NSA;
- identify priorities, targets, and special interventions for designated groups;
- establish a SIS to track changes in the demand and supply of skills;
- establish a Skills Forecasting Model;
- monitor implementation; and
- evaluate the impact of skills development programs.

With activities revolving around labor market trends, skills trends, sector studies, strategic planning, and designated groups, the SDPU above all is entrusted with the role of strategic planning. The SDPU provides information to decision-makers, enabling them to make informed decisions to match training with skills demand. In addition to establishing a "context of economic activity" and its implications for skills development, the SDPU evaluates Sector Skills Plans and strengthens the strategic planning capabilities of SETAs.

The Sector Skills Plan contributes to the NQF by furthering the objectives of the framework by incorporating its guidelines of credits-based progression, transferability/portability, and access to the process of skills planning. An example of a comprehensive Skills Plan aiming to bring about significant changes in skills development in that actor is the one prepared by the Clothing, Textiles, Footwear and Leather SETA in 2000. The CTFL SETA report outlined key characteristics of the sector from a wide range of sources and also identified factors influencing change in the sector, such as globalization, increased competition, deregulation, the technical revolution, and labor legislation, to name a few.[35] A sector development strategy assessed that the strengths of the CTFL Sector included technical provision, sound infrastructure, a commitment to skills development by stakeholders, and high levels of technology especially in textiles and leather. On the other hand, weaknesses were found in low levels of literacy and numeracy, a lack of training capacity to undertake critical mass skills development and a range of manufacturing areas that contribute to the inability of the sector to compete locally and internationally. In addition, future skills needs, issues in the budget and evaluation were comprehensively addressed. For instance, in order to fund this ambitious skills development project, the South African government enacted the Skills Development Levies Act. In 2000, 90% of firms in South Africa began contributing a levy of 0.5%. In 2001, this levy was increased to 1%.

The key objectives of the National Skills Development Strategy are developing a culture of high quality life-long learning, fostering skills development in the formal economy for productivity and employment growth, stimulating and supporting skills development in small enterprises, providing opportunities for skills development in social development initiatives, and assisting new entrants into employment in the labor market.[36] An example of such efforts is shown in Table 1, which shows a gradual improvement in all categories of performance.

---

[34] Source : The Learning Network SA('2000)

[35] Clothing, Textiles, Footwear and Leather Sector Education and Training Authority, *Sector Skills Plan for the Clothing, Textiles, Footwear and Leather Sector*, August 2000.

[36] "National Skills Development Strategy," Confidential Draft Report to the Department of Labor, September 24, 2000.

Table 4.12. Trends in Employment Levels by NQF Qualifications

Category	1994	1995	1996	1997	1998	1999
No. of workers with less than Grade 9	2,927,830	3,021,195	172,799	142,896	406,528	455,128
Total formal employment	7,691,526	8,146,454	8,299,083	8,403,901	8,403,901	8,965,301
Share of workers with less than NQF 1 (%)	38.07	37.09	38.23	40.54	40.54	38.54
Share of workers with more than NQF 1 (%)	61.93	62.91	61.46	59.46	59.46	61.46

Source: Statistics South Africa, *October Household Surveys (1994-1999)*; "National Skills Development Strategy," Confidential Draft Report to the Department of Labor, September 24, 2000.

3) Outcomes-based System

The main feature of the new framework for national qualifications is its emphasis on the notion of learning outcomes. In fact, a paradigmatic shift is taking place in the South African education system, moving away from the previous focus on the content of curriculum to one that stresses outcomes. Outcomes-based education and training (OBE), as described in a report by the Department of Education, is "learner-centered with the emphasis on what the learner should be able to know, to understand, to do and to become.")[37] According to Young, in an outcomes-based education and training system, "Achievement...is defined in terms of criteria rather than normatively in terms of a given percentage of candidates that are expected to reach a given level."[38]

The need for an outcomes-based system of education and training is driven from both domestic and international sources. Internally, in South Africa, the two main problems of the previous qualification system have been identified as unequal *access* and a lack of *transferability*. From the viewpoint of learners, financial discrimination and artificial hierarchies of learning institutions have skewed the distribution of education opportunities. Another problem is one of transferability, or portability, arising from the enduring practice of institutions arbitrarily choosing to recognize or not to recognize qualifications achieved at other institutions. This stems from employers' preference toward certain institutions that are reputed to train the most qualified workers. As a result, the institution in which qualification was obtained often plays a larger role than the actual ability or skill level of the qualifying student.[39]

---

[37] Department of Education, *Op. cit.*, p. 73.

[38] M. Young, "Theoretical Grounding and an International Perspective," Proceedings of a Conference on the National Qualifications Framework, Technikon SA, Johannesburg, 22-24 April 1996; cited in Sebolelo Mokhobo-Nomvete, "Assessment in an Outcome-based Education and Training System: An Overview," *SAQA Bulletin*, Vol. 2, No. 3, January 1999, p. 119.

In addition, external imperatives, in the form of global trends and discussions, have heightened the recognition that traditional definitions of knowledge and education are increasingly undergoing system-wide changes in various parts of the world. At the center of such developments is the emphasis put on competence and outcomes. South Africa has also embraced these concepts through its introduction of the NQF, which stresses applied competence, defined as "the ability to put into practice in the relevant context the learning outcomes acquired in obtaining a qualification" by the SAQA.[40] Under the NQF, learners are able to not only rise through the different levels at their own pace but also attain credits through informally-acquired knowledge or experience.

Thus, in order to remedy the indigenous problems of access and portability, South Africa has introduced systemic changes in the education and training system. Adopting international standards, the NQF is committed to articulating national qualifications in terms of achieved learning outcomes. To attain this objective in a structured and integrated manner, the NQF challenges the traditional concept of traditional curriculum development as perceived in the South African context by separating the tripartite processes of (1) standards setting; (2) the design, delivery, and assessment of standards; and (3) quality assurance. The focus on outcomes is intended to offer all learners the opportunity to gain essential skills of international comparability.

To achieve further coherence in the NQF, the Critical Cross-field Education and Training Outcomes, commonly referred to as the Critical Outcomes, have been added to the framework. The NQF identifies as the Critical Outcomes those qualities required for learners' development within the education and training system, regardless of the specific area or content of learning. These Critical Outcomes, deemed to be critical for developing a worker's capacity for life-long learning, are incorporated into national standards by the standards setters of the SAQA. Some examples include the following:

---

[39] South African Qualifications Authority, p. 6.
[40] *Ibid.*, p. 7.

- Identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made;
- Work effectively with others as a member of a team, group, organization, community;
- Organize and manage oneself and one's activities responsibly and effectively;
- Collect, analyze, organize and critically evaluate information;
- Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation;
- Use science and technology effectively and critically, showing responsibility towards the environment and health of others;
- Demonstrate an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation.

Overall, qualification under the NQF represents a planned combination of learning outcomes which has a defined purpose and which is intended to provide qualifying learners with applied competence and a basis for further learning. In addition, the learning outcomes, standards and qualifications, must be so clear that there is no doubt as to what is expected of qualifying learners. Another feature of the NQF is Recognition of Prior Learning (RPL), which allows for the recognition of learning that has taken place outside traditional learning contexts by accrediting learners with certain learning achievements, leading to greater mobility and progression within education, training and career paths.

3. The Structure of the National Qualifications Framework (NQF)

1) Linkage between Education and Vocational Training

The NQF specifies the levels, bands and types of qualifications and certificates in education and training. It is composed of eight levels and can be divided into the three bands of higher education (levels 5-8), further education (levels 2-4), and general education (level 1), with levels 1 and 8 regarded as open-ended.

In each of these bands, there are both public and independent providers of education. The General Education and Training band covers primary schools (grades R or 0 up to 7), secondary schools (grades 8 and upwards), combined schools (overlapping at grade 7), early childhood development (ECD) institutions (pre-primary grades up to grade 0 or R), institutions for learners with special education needs (LSEN) and, adult basic education and training (ABET) institutions. Ordinary (or mainstream) schools may be primary, secondary or combined with pre-primary or reception grades attached. The Further Education and Training band covers grades 10 to 12 in the secondary school system and approximately 153 Technical Colleges. Finally, the Higher Education band comprises technikons, universities, colleges of education (teacher training colleges), nursing colleges, police colleges and agricultural colleges. Police, nursing, and agricultural colleges are the responsibility of the Minister of Education as a result of the Higher Education Act of 1997.

Table 4.13. The National Qualifications Framework (NQF)

NQF Level	Band	Types of Qualification	School Grades
8	Higher Education and Training	Doctorate Further Research Degree Higher Degree Professional Qualification National First Degree (360+ credits -72+ at or above Level 6) Higher Diploma National Diploma (240+ credits - 72+ at or above Level 5) National Certificate (120+ credits-72+ at or above level at which certificate is registered) *(Fundamental, Core and Elective learning: number of credits to be specified)*	
7			
6			
5			
Further Education and Training Certificate			

4	Further Education and Training	National Certificate (120+ credits -72+ at or above level at which certificate is registered) *(Fundamental learning:* *20+ credits from field of Communication Studies and Language* *16+ credits from sub-field of Mathematics)* *(Core and Elective learning:52+ credits)*	12
3			11
2			10

General Education and Training Certificate

1	General Education and Training	National Certificate (120+ credits -72+ at or above level at which certificate is registered) *(Fundamental learning:* *20+ credits from field of Communication Studies&Language* *16+ credits from sub-field of Mathematics - including numeracy)* *(Core and Elective learning:36+ credits)*	ABET 4 ABET 3 ABET 2 ABET 1	9 8 7 6 5 4 3 2 1 R

One of the key principles of the NQF is the concept of integration. In other words, the NQF is intended to achieve integration of education and training, of mental and manual labor, of theory and practice, and of academic and vocational.[41] According to the definition given by the SAQA, the NQF is "the set of principles and guidelines by which records of learner achievement are registered to enable national recognition of acquired skills and knowledge, thereby ensuring an *integrated system* that encourages life-long learning."[42]

---

[41] National Training Board & German Technical Co-operation, *Op. cit.*, p. 20.

[42] South African Qualifications Authority, p. 3.

With the introduction of the NQF, South Africa is going through a period of transition in which new policies co-exist with the old. There is a heightened recognition on the need to actively link the old system based on academic qualifications with the new framework of occupational qualifications. For instance, upon graduation of Grade 9, learners are accredited with Level 1 on the NQF. Those receiving further education and training—Grades 10 to 12 at school—each receive a Level 2 to 4 qualification. Degrees are recognized as reaching up to Levels 6 to 8 on the QF.

2) A Credit-based Qualifications System

The unique feature of the South African NQF is its credit-based system of learning. It not only connects academic and vocational qualifications, but also acts as the chief facilitator of lifelong learning based on learning outcomes. Learning is recognized when a learner attains the required number and range of credits at a specific level of the NQF. When such requirements are achieved, the learner is accredited with a qualification. A qualification must be made up of at least 120 credits with a minimum of 72 credits at or above the level at which the qualification is being awarded.

The SAQA also uses a credit system, in which one credit equals 10 notional hours of learning. "Notional hours of learning" is a term defined as the learning time that it takes an average learner to achieve the designated outcomes. It incorporates concepts like contact time, time spent in structured learning in the workplace, individual learning, and assessment.[43]

Qualifications and standards are registered at specific levels of the framework and have a credit value. In the course of their study, learners may accumulate credits over time towards a qualification. The different types of qualifications include national qualifications and organizational qualifications, as illustrated in the table below.

---

[43] South African Qualifications Authority, *The National Qualifications Framework and the Standards Setting*, July 2000, p. 9.

Table 4.14. Types of Qualifications

National Certificate	minimum of 120 credits, at least 72 of which are at or higher than the level of the certificate
National Diploma	minimum of 240 credits, at least 72 of which are at level 5 or higher
Degrees	minimum of 360 credits, at least 72 of which are at level 6 or higher

As a result, holders of a national certificate, with a minimum of 120 credits, are able to achieve Levels 1 to 5 on the NQF, depending on the number of credits at a certain level. Learners receive a national diploma when they accumulate a minimum of 240 credits, at least 72 of which are at Level 5 and up. Finally, learners are awarded a degree after 360 credits or more, with 72 credits at Level 6 or higher.

3) Fields of Learning under the NQF

Within the NQF, all education and training is organized into twelve fields: Agriculture and Nature Conservation; Culture and Arts; Business, Commerce and Management Studies; Communication Studies and Language; Education, Training and Development; Manufacturing, Engineering and Technology; Human and Social Studies; Law, Military Science and Security; Health Science and Social Services; Physical, Mathematical, Computer, and Life Sciences; Services; and Physical Planning and Construction. Examples of sub-fields under each learning field are illustrated in Table 4. With respect to administration, each field has a NSB, which is responsible for defining the boundaries of its own field and recommending registration of qualifications and standards to the SAQA. It should be noted that while NSBs do not generate standards or qualifications, they oversee the process at the sub-field level.

Table 4.15. **Fields of Learning**

Field	Description	Examples of Sub-fields
NSB 01	Agriculture and Nature Conservation	Primary Agriculture Secondary Agriculture Nature Conservation Forestry and Wood Technology Horticulture
NSB 02	Culture and Arts	Design Studies Visual Arts Performing Arts Cultural Studies Music Sport Film, Television and Video
NSB 03	Business, Commerce and Management Studies	Finance, Economic & Accounting Generic Management Human Resources Marketing Purchasing Procurement Office Administration Public Administration Project Management Public Relations
NSB 04	Communication Studies and Language	Communication Information Studies Language Literature
NSB 05	Education, Training and Development	Schooling Higher Education & Training Early Childhood Development Adult Learning
NSB 06	Manufacturing, Engineering and Technology	Engineering and Related Design Manufacturing and Assembly Fabrication and Extraction

NSB 07	Human and Social Studies	Environmental Relations General Social Sciences Industrial & Organizational Governance and Human Resource Development Public Policy, Politics & Democratic Citizenship Religious & Ethical Foundations of Society Rural & Agrarian Studies Traditions, History & Legacies Urban & Regional Studies
NSB 08	Law, Military Science and Security	Safety in Society Justice in Society Sovereignty of the State
NSB 09	Health Science and Social Services	Preventive Health Promotive Health & Developmental Services Curative Health Rehabilitative Services
NSB 10	Physical, Mathematical, Computer and Life Sciences	Mathematical Sciences Physical Sciences Life Sciences (See NSB 01 & 07) Information Technology & Computer Sciences Earth & Space Sciences Environmental Sciences
NSB 11	Services	Hospitality, Tourism, Travel, Gaming and Leisure Transport, Operations & Logistics Personal Care Wholesale & Retail Consumer Services
NSB 12	Physical Planning and Construction	Physical Planning, Design and Management Building Construction Civil Engineering Construction Electrical Infrastructure Construction

4. Standards Setting

In order to meet the challenges of the future and compete within the global economy, industries need to ensure that their most important resources, humans, are equipped with the skills and knowledge required to fulfil the industry's purpose. Before industries embark on extensive development and delivery of training programs, they need to carefully analyze and articulate what skills and knowledge they require within the industry, and the standard of performance expected by individuals such that the purposes of the industry will be met.

Having set the standards for that industry, it is up to the industry to ensure that people perform at the standard required through on-going assessment of performance, and provide the sort of training that enables people to meet those standards.

The development of NQF promotes an outcomes-based approach to education and training, and has as its starting point the intended outcomes of learning. These outcomes are described in documents called unit standards which form the building blocks of the NQF. By linking to the NQF, the imperatives of industry are supported, the needs of individual learners are met, and the competitiveness of the nation is enhanced.

In this context setting standards is "a primary tool for ensuring that people are recognized for learning achievements on an objective and transparent basis."[44]

As defined by the SAQA Act, unit standards are: (a) registered statements of desired education and training *outcomes*; (b) their associated *assessment criteria*, describing the quality of the expected performance; and (c) the *scope and context* in which the individual is expected to perform. The purpose of such standards is to provide clear and objective learning or assessment outcomes to all stakeholders: the learner, the assessor, and the provider of education and training. Thus, unit standards, by providing descriptions of standards of performance required by the industry, act as a key component of the national shift towards outcomes-based learning.

Qualifications are composed of clusters of registered unit standards to meet the needs of industries, firms, and other institutions. Although the SAQA provides the guidelines regarding the composition of and criteria for qualifications, the actual design of qualifications are determined by the various sectors. As previously stated, there are 12 NSBs to represent the interests of each field of learning. NSBs are essentially stakeholder groupings, which consist of state, business, labor, providers, community and critical interest groups with specific expertise that generate and recommend registration of qualifications and unit standards. Since NSBs do not and cannot have the relevant expertise nor the capacity to generate standards for every sub-field, however, they establish SGBs to carry out the actual task of generating standards.

---

[44] South African Qualifications Authority, *National Qualifications Framework and the Standards Setting*, p. 15.

In addition, the SAQA accredits ETQAs in economic, social, or education and training sub-system sectors to ensure that providers in those sectors have the capacity to deliver appropriate learning programs under the NQF. To ensure consistency in the assessment of registered qualifications and standards, organizations accredited to act as ETQAs, such as the Sector Education and Training Authorities (SETAs), are authorized to formulate assessment plans and register the assessors to implement those plans.

Thus, the key words in the outcomes-based education and training system in South Africa are *standards* for NQF qualifications and *quality assurance* for learning and assessment provision. Quality indicators such as integration; learning outcomes; access, mobility, and progression; and personal national development are some of the criteria for judging the soundness of education and training.[45] Learning and learning assessments are implemented based on these objectives, and this in turn leads to "national and international confidence in the standards and qualifications, registered, provided, and achieved."[46] The integrity of the NQF is further maintained through the separate and yet inter-linked processes of standard setting and quality assessment of education and training.

1) Roles of National Standard Bodies (NSB)s and Standard
2) Generating Bodies (SGB)s in Standards Setting

The standards setting process consists broadly of three separate stages: analysis and planning, development of standards and qualifications, and quality assurance. The first stage involves the standards generating activities of the NSBs and the SGBs, in which a rudimentary plan for the number and type of qualifications and standards and a description of the process is outlined. In Stage 2, each NSB recognizes and monitors SGBs so that they can consolidate or create standards and/or qualifications for their respective sub-fields. In the third and final stage, each NSB proposes the quality assurance system requirements for assessment of qualifications and standards. It also endorses accreditation proposals from ETQAs, which are guided by the SAQA. ETQAs, in order to assure the quality of the specific standards and qualifications are responsible for submitting the following information to the SAQA on a yearly basis:

---

[45] For detailed information, see South African Qualifications Authority, *The National Qualifications Framework and Quality Assurance*, May 2000, pp. 4-5.

[46] *Ibid.*, p. 6.

☐ learner take-up of standards and qualifications, i.e. learner enrollments by standard or qualification;

☐ learner progress and achievements;

☐ appropriateness of learning outcomes to assessment criteria and integrative assessments in the case of qualifications not based on unit standards;

☐ access to additional or further education and training opportunities or employment opportunities for learners achieving the standards or qualifications;

☐ self-reviews and evaluations of quality management systems, policies and procedures in place amongst constituent providers; and

☐ proposals for new or amendments to registered standards or qualifications.

To ensure the high quality of qualifications and standards in the NQF, the SAQA audits the standards setting processes undertaken by each NSB and SGB. By acting as a mediator between standards setting and quality assurance processes, the SAQA also coordinates information across the various bodies across different sectors.

The locus of standards generation is the SGB, while the NSB ensures coherence in and across its organizing field. SGBs can be either *established* as an initiative of the SAQA or be *recognized* by the SAQA when its formation is initiated by a firm or industry sector. Once formed, whether via an enterprise or sector route for purposes of recognition by an NSB, or via an NSB route (that is, through establishment by the NSB), the SGB operates as a legal, independent entity with its own unique identity according to the criteria as outlined in the NSB Regulations.[47] Both processes are explained in detail in the following tables.

---

[47] South African Qualifications Authority, *Standards Generating Body Manual Fourth Draft*, Draft Document for Public Comment, May 2000, p. 38.

Table 4.16. Process for SGB Establishment

Step	Timeline
1. Convene meeting of "experts" in the sub-field to develop a preliminary brief for the SGB	1 day
2. Advertise, through the media (print and/or radio), the *Government Gazette*, and the SAQA web-site, the proposed establishment of the SGB and its brief, calling for nominations to serve on it	Within 1 week
3. Process nominations: (a) Verify nominations (b) Consult affected constituencies, and shortlist up to 25 nominations for publication in *Government Gazette*	Maximum of 2 weeks
4. Publish SGB brief and composition for public comment in *Government Gazette* and on the SAQA web-site	30 days
5. Submit revised SGB brief and membership to NSB SGB sub-committee for evaluation	
6. Register SGB	
7. Ensure that the work of the SGB meets SAQA requirements	
8. Dissolve when brief is fulfilled, de-register for inadequate performance and/or inability to fulfill its brief, or extend brief of SGB	

Sources: South African Qualifications Authority, "Standards Generation within the National Qualification Framework," A SAQA Position Paper, April 1999; South African Qualifications Authority, *The National Qualifications Framework and the Standards Setting*, July 2000.

Table 4.17. Process for SGB Recognition

Step	Timeline
1. Send letter of intent for recognition as SGB to SAQA	Received and acknowledged within 2 days
2. NSB Sub-committee for SGBs considers need for meeting with potential SGB applicant to discuss fit with NSB scope	Within 3 days of receipt
3. The SGB applicant revises its application	Open-ended

4. The NSB coordinator receives and processes application for SGB status. It is screened vis-à-vis initial conversation and the NSB Regulations. In particular, it will be checked against issues of expertise and the requirements of equity and redress. The application will be presented to the Director of Standards Setting and Development for screening before being gazetted.	1 week
5. Should the application not pass the screening, the originators of the application will be contacted and further information and direction made available to them.	1 week
6. Should the application conform to NSB Regulations and be reasonably in line with all other specifications, it is gazetted via the Executive Officer's office.	1 week
7. During the gazetting period, the NSB SGB subcommittee and the SAQA office consider necessary changes to the SGB application, and communicate these to the originators of the application.	
8. NSB coordinator forwards public comment to NSB, SGB applicants, and the Director of DSSD, with a recommendation.	
9. The finalized SGB application is forwarded to the SAQA office for inclusion on the agenda of the next NSB meeting.	
10. Accept or reject the application, on the basis of a proposal by the NSB sub-committee for SGBs.	
11. The final composition and brief of the SGB are published in the *Government Gazette* for public notification.	
12. Ensure that the work of the SGB meets SAQA requirements.	
13. Dissolve on fulfillment of its brief, de-register for inadequate performance and/or inability to fulfill its brief, or extend the brief of the SGB.	

Sources: South African Qualifications Authority, "Standards Generation within the National Qualification Framework," A SAQA Position Paper, April 1999; South

African Qualifications Authority, *The National Qualifications Framework and the Standards Setting*, July 2000.

2) Standards Setting Methodology

The standards setting model developed by the Education, Training and Development (ETD) Practices Project, funded by the National Training Board (NTB) and the German Federal Ministry for Economic Co-operation and Development, comprises eight components. Although conceptually, these eight components are described as a cycle, many run as parallel processes once operationalized.

Component 1: Establishing Political and Technical Processes

Since the development of standards involves various stakeholders, it is important to achieve agreement on the processes and time frames. For instance, tensions arise at representative forums required by NSBs and SGBs, mainly from conflicts between representing particular constituencies' positions and developing generic field (or sub-field) positions. Thus, consultative mechanisms are necessary to derive productive dialogues and conclusions. The Plenary, "a form of engaging directly with the field or sub-field *as a field or sub-field*" (emphasis in original), brings stakeholders together so that they may discuss standards setting issues from "a better understanding of the dynamics and concerns with other stakeholder groupings."[48]

The gist of the technical aspect is a cost-effective and a contextually rich process of standards development that involves generating the standards and qualifications with stakeholders in particular sites which are typical of their sub-field. These are then generalized through consulting across the sub-field in workshops and other processes. The relationship between specialized research and development and stakeholder participation is also pointed out as a vital part of determining the overall quality of standards and qualifications.

Component 2: Undertaking a Field Analysis

---

[48] Beatrice Enslin, "Toward Transforming the Field of ETD: A Methodology and Model for Qualifications and Standards-Setting from the Education, Training and Development (ETD) Practices Project," *South African Qualifications Authority Bulletin*, Vol. 2, No. 1-3 (August 1998-January 1999), p. 37.

The next step is to carry out a field analysis that describes the current and prospective nature of the field (or sub-field) through analyzing the forces impacting on the field currently and in future; mapping the current and future patterns of progression; indicating the qualitative transformations needed with regard to the competence of practitioners, and identifying the components of such competence; and indicating the existing governance and nature of provision, employment and licensing, as well as likely or necessary changes to these.[49]

The nature of questions asked in a field analysis should be based on both long-term and short-term strategies. According to experts involved in pilot projects of the standards setting process, the long-term strategy poses questions requiring a deeper level of analysis, which may be the basis of commissioned research or of a research agenda taken up by higher education institutions, for example. The short-term strategy may attempt to answer the same or other questions at a more manageable level of analysis through workshops with stakeholders and practitioners. Overall, the long-term strategy is critical for improving the quality of the field analysis. Within this broader strategy, however, it must be recognized that setting achievable goals are just as important as engaging in-depth analysis as a precursor to the development of standards and qualifications.

Component 3: Designing the Qualification Structure

The third component of the standards setting model has to do with the qualification structure, whose broad framework was established according to the SAQA's criteria for registration of qualifications. The three categories of qualifications are *fundamental* ("the learning…which forms the grounding or basis needed to undertake the education, training, or further learning required in the obtaining of a qualification"), *core* ("compulsory learning required in situations contextually relevant to the particular qualification"), and *elective* ("additional credits at the level of the National Qualifications Framework specified, from which a choice may be made to ensure that the purpose of the qualification is achieved"). The general content of these categories is to be derived from an analysis of the nature of competence in the field, based on descriptions of the relationships between *contextual expertise* (clustered around the institutional contexts of schooling, occupation-directed, development sector and higher education and training contexts), *practitioner roles* (clustered into teaching, design and management with roles distributed across each cluster), and *occupational expertise* (distributed across other fields, such as language and communication, or manufacturing, or management). Although these are not "competence" in themselves, they comprise the components of competence. Competence, therefore, "lies at the level of the qualification rather than individual units."[50]

---

[49] *Ibid.*, p. 37.

Component 4: Developing the Progression Paths

Based on the patterns of progression identified in the field analysis, progression paths in learning and careers are developed. Two descriptor levels were found to be common across the ETD field: (1) teaching, design, or management *practices* and (2) *research* practice. Subsequently, a three level qualification structure was adopted in order to accommodate the demands of the development and occupation-directed sectors, which specifically expressed the need for *introductory* qualifications (manifested as NQF level 2-4).

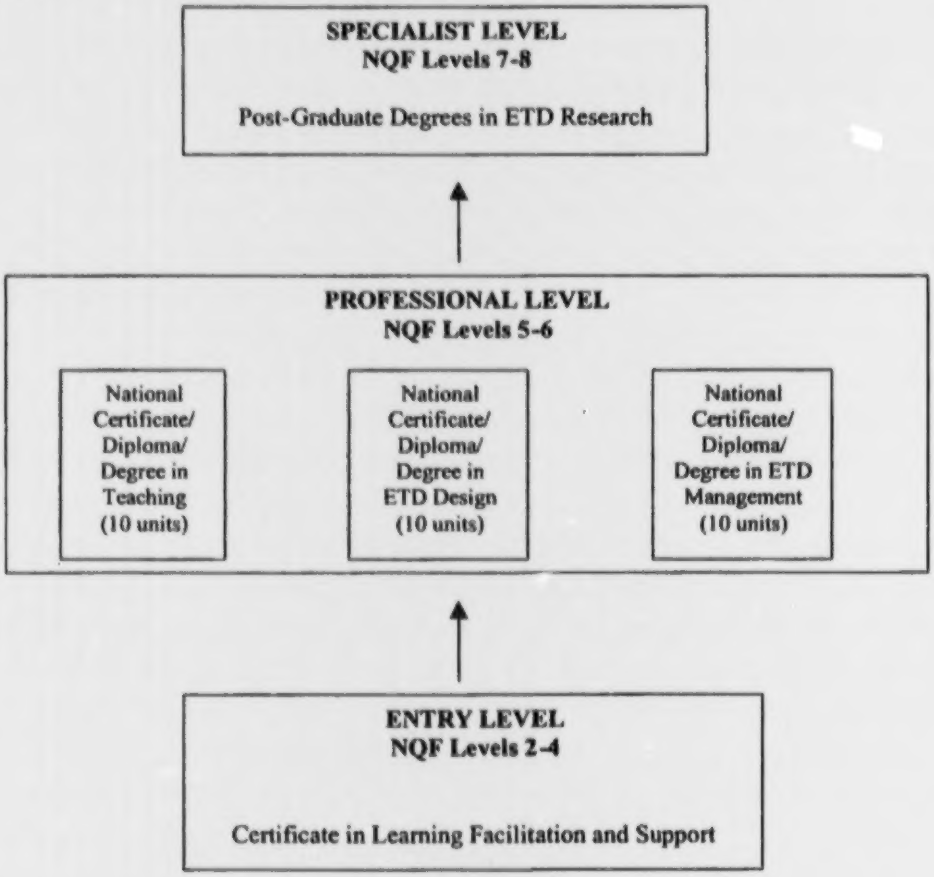
Certificate level (NQF 2-4)	Qualification introductory to ETD practice (for practitioners working in the occupation-directed and development sectors only)
Degree/diploma level (NQF 5-6)	Qualifications in ETD practice (for practitioners in all sectors)
Higher Degree level (NQF 7-8)	Qualifications in the practice of ETD research (for practitioners in all sectors)

Within the framework of levels and qualification structure, there is a high degree of both vertical and horizontal mobility. Each qualification requires a minimum base competence as prescribed in the fundamental category. While vertical progression proceeds when a worker acquires units at higher levels, horizontal progression occurs when units, which expand the base competence of a practitioner across a wider range of subject areas or contexts and/or a greater variety of roles, are acquired.

---

[50] *Ibid.*, p. 38.

Figure 4.9. Learning Progression Path


SPECIALIST LEVEL
NQF Levels 7-8
Post-Graduate Degrees in ETD Research
PROFESSIONAL LEVEL
NQF Levels 5-6
National Certificate/ Diploma/ Degree in Teaching (10 units)
National Certificate/ Diploma/ Degree in ETD Design (10 units)
National Certificate/ Diploma/ Degree in ETD Management (10 units)
ENTRY LEVEL
NQF Levels 2-4
Certificate in Learning Facilitation and Support

Source: National Training Board & German Technical Co-operation, Final Report of the *Education, Training and Development Practices Project*, October 1998, p. 69.

Component 5: Determining the Standards Required

The fifth component of the model determines the specific standards required by examining the results of the field analysis, which may indicate what needs to be improved in each area. The following is a proposed quality foci, in which each qualification level outcome is the "quality focus" for a standard required in the qualification. The specific and critical outcomes for each qualification are composed of practical, foundational, and reflexive competence. Foundational competence is an understanding of what is being done and why, practical competence a demonstrated ability to do a particular thing, while reflexive competence is a demonstrated ability to integrate or connect performance with the understanding of that performance so as to learn from the actions and adapt to change and unforeseen circumstances. These also act as the evaluative criteria that constitute each level of qualification. This is intended to place both academic and occupational qualifications at their appropriate levels based on objective standards. Due to such efforts, qualifications in hospitality, travel, gaming and leisure as well as finance have received accreditation under the NQF.

<table>
<tr><td colspan="3">Qualification:
CERTIFICATE IN EDUCATION, TRAINING AND DEVELOPMENT</td></tr>
<tr><td colspan="3">LEVEL: 2-4 TOTAL CREDITS:</td></tr>
<tr><td colspan="3">QUALITY FOCUS

The certificate provides entry to the ETD fields as well as entry to a professional career path for those already in ETD practice but without formal qualifications. It caters for whole as well as part job practitioners and forms the basis of further qualifications in ETD.</td></tr>
<tr><td>FUNDAMENTAL LEARNING</td><td>CORE LEARNING</td><td>ELECTIVE LEARNING</td></tr>
<tr><td>A. Communication Studies and Language
B. Physical, Mathematical, Computer and Life Sciences
C. Occupational Expertise</td><td>01 Facilitation of learning
02 Learning program planning, preparation and evaluation
03 Management of learning
04 Learner mentoring and support
05 Teaching and tutor development</td><td>06 Contextual understanding (Occupation-directed contexts)
OR
07 Contextual understanding (ABET and Development Sector)</td></tr>
<tr><td colspan="3">·The units in the Fundamental learning area are prescribed by SAQA, with the</td></tr>
</table>

BEST COPY AVAILABLE

exception of occupational expertise (what is to be learned).

- All five standards in the Core area must be completed.
- The elective area consists of a choice between two options which allow for specialization in the contexts within which practitioners work.
- The learner must meet the individual requirements of each standard, as well as the integrated requirements of the qualification as listed below.

SPECIFIC AND CRITICAL OUTCOMES AT QUALIFICATION LEVEL

Practical Competence

The demonstrated ability to consider a range of options and make decisions about:

- facilitating learning in groups and on a one-to-one basis, within development and workplace contexts;
- counselling learners with regard to learning and support materials, the use of varied learning resources, and administrative routines and requirements;
- monitoring and counseling learners on learning progress and achievements; and
- working with a range of contexts appropriate learning support materials and activities and making adaptations to these.

Foundational Competence

The demonstrated understanding of:

- learning as an holistic, creative and lifelong process of interaction with familiar knowledge contexts and life experiences;
- socio-cultural, language and literacy differences as they exist in groups;
- the topic of subject matter relevant to learning facilitation, administration and support and the decisions and judgments that need to be made; and
- how local contexts and conditions influence learning.

Reflexive Competence

The demonstrated ability to:

- reflect on and evaluate all aspects of own facilitation and support of learning practices and the learning facilitation and support of learning of others in the same context; and
- appraise own performance with an understanding of that performance so that one can learn from one's own actions.

Component 6: Writing the Standards

The most controversial issue in the entire standard setting process seems to be the task of writing the standards themselves. The four major factors behind the formulation of

BEST COPY AVAILABLE

standards are denoted in the terms applied competence, applied competence as outcome, integrated assessment, and critical cross-field outcomes.

The concept of applied competence is central to the development and implementation of standards and comprises the three dimensions of competence: practical, foundational, and reflexive. In addition, the emphasis is again put on outcomes as applied competence is meant to signify what is shown in performance outcomes. Thirdly, since standards can only be assessed relatively to other standards, range statements were included in the format to show the ability of the practitioner to integrate the unit outcomes with the components

Its of competence described in other units. Finally, it should be noted that at this stage of the NQF project, the critical cross-field outcomes or underlying knowledge are not specified separately. However, they both exist in an integrated form in the specific outcomes (practical, foundational, and reflexive).

Component 7: Designing Uses

This next component involves the translation of standards and qualifications into practical uses. However, it must be recognized that the standards and qualifications in their present form are only intended to serve as the basis upon which curricula, performance appraisal, and professional licensing requirements can be designed.

Component 8: Revising the Process, Qualifications, and Standards

According to SAQA regulations, periodic revisions of standards (once every three years) are required. The establishment of early review procedures and feedback mechanisms are critical in order to collect and analyze detailed information even before the stage of a final review.

3) Format for Standards

Based on the above procedures, the format for standards includes the following components:

- Quality focus (as identified under Component 5)
- Specific outcomes (a description of the practical, foundational and reflexive

competence to be assessed, in which are embedded both the SAQA "critical outcomes" and "underpinning knowledge")

- Assessment criteria (which describe the performance through which or in relation to which the competence may be assessed)
- Range variable (which defines the scope and character of competence to be assessed)

An example of a standard format is shown in the illustration below.

Figure 4.10. Format for Standards

Title of standard:

STANDARD: LEVEL:
CREDITS:
QUALITY FOCUS:

Specific and critical outcomes
    Practical competence
    Foundational competence
    Reflexive competence
Assessment criteria (for integrated competence)
Range statement

5. Level Descriptors in the NQF

Because of the way in which the NQF is structured, the role of levels in a credits-based qualifications framework is vital to the discussion of the new framework of education and training in South Africa. As suggested by Angelis, level descriptors "ensure consistency in assigning a standard or qualification to an NQF level," thereby providing "criteria for each level so that various forms of learning can be made equivalent in terms of complexity."[51] Descriptors of levels are statements about intellectual demand, complexity of learning, and learner autonomy at each level at which the credit is awarded. Level descriptors enable writers of standards to contexturalize the meaning of level and to apply it properly.

---

[51] D. Angelis, *Learning Makes Success* (Cape Town: Cape Town Book Publishers, 2000), p. 17; cited in South African Qualifications Authority, "The Development of Level Descriptors for the NQF," Discussion Document for Public Comment, *Government Gazette*, Vol. 424, October 24, 2000, p. 5.

For example, Generic level descriptors describe knowledge attributes of all disciplines and contexts and outline the expectations of progressive learning development in terms of general intellectual demand. In contrast, practitioner groups within particular professional fields can also develop discipline/professional descriptors, which require a greater degree of detail and specificity. Institutions or individual educators within institutions can develop program/module descriptors whose level of detail differs from generic level descriptors. Consequently, different types of level descriptors indicate varying degrees of generality or specificity depending on the context in which they are used. Since the NQF is to be applied across all disciplines and contexts, the focus in South Africa is on the development of generic level descriptors.

The Scottish example presents a similar case. Although general descriptors do not define a standard, they provide guidelines about what a statement about a standard may contain since such statements must refer to learning outcomes. It is in this manner that the generic level descriptor enables the standards to be placed in a framework of levels.[52]The notion of levels of study or achievement becomes an important issue especially in the higher education sector. In Scotland, the expansion of universities and the drastic increase in the provision of higher education has turned it into a mass system, raising the need for a credit-based system with modular programs in order to achieve flexibility. As the Scottish case presents, one of the fundamental building blocks of a credit-based qualification framework is the concept of level of learning.[53]

There are many points of comparison that show that the South African initiative draws largely from the Scottish case. For instance, levels in credit-based frameworks, such as in Scotland and South Africa, are by definition not a function of time lapsed from the beginning of the program, but rather represent positions of equivalence in higher education programs of study and are fundamentally linked to the idea of progression. Linked to performance or attainment, progression is defined in terms of time, distance traveled through a curriculum, change in intellectual demand or difficulty, or other features of the learning situation.[54] As in South Africa, Scottish level descriptors support the definition and assurance of quality and standards of credit-based learning within the SCOTCAT (Scottish Credit Accumulation and Transfer scheme) Credit Framework for qualifications.

---

[52] Roy Partington, "Levels, Standards and Credit Based Award-Frameworks," Report to Quality Assurance Agency for Higher Education, October 1997, in *South African Qualifications Authority Bulletin*, Vol. 4, No. 1 (May 2000), p. 76.

[53] *Ibid.*, p. 57.

Essentially, level descriptors in the South African framework display the distinction between two levels, the distinction between different types of degrees—for instance, between a professional and an academic degree—pitched at the same level, and the progression within the framework in terms of bands.[55] Level descriptors were developed with the intention of creating coherence between the three bands—from general education and training to higher education and training—based on the assumption that a set of level descriptors for one band will not create a continuous hierarchy of levels that describe achievement and progression within the NQF.

The content of level descriptors should include intellectual/academic skills, operational contexts, and learner autonomy. Encapsulating intellectual/academic skills, foundational competence should reflect depth of knowledge and skills including level of understanding, application, analysis, synthesis/creativity and evaluation, and also psychomotor skills, self-appraisal/reflection on practice, planning, management of learning, problem solving, communication and presentation of information, interactive and group skills. Practical competence, in its operational context, includes the contexts, tasks, and procedures required for the application of the intellectual/academic skills identified for that particular level. Finally, reflexive competence embraces the broader concept of learner autonomy and includes responsibility, ethical issues as well as general professional codes of conduct.

The differences between levels in terms of learning complexity are manifested in the three categories of foundational, practical, and reflexive competence, since level descriptors reflect progression in terms of learning demand. In the advanced levels of the qualifications framework, however, the differences between knowledge attributes, operational contexts or learner autonomy are likely to be less significant. The slight nuances, therefore, are indicated by a difference in the minimum number of credits required for specific qualifications at that level.

---

[54] *Ibid.*, p. 62.

[55] South African Qualifications Authority, "The Development of Level Descriptors for the NQF," p. 12.

Table 4.18. Summary of Differences between Bands

Band	Foundational Competence	Practical Competence	Reflexive Competence
GET	-*Knowledge*: Narrow ranging -*Informational Processing*: Recall -*Problem Solving*: Known solutions to familiar problems	*Contexts*: Closely defined *Procedures*: Repetitive	Directed Close supervision Not responsible for own learning or learning of others
FET	-*Knowledge*: Broad knowledge base with some theoretical concepts -*Information Processing*: Basic, analytical, interpretive -*Problem Solving*: Innovative responses	*Contexts:* Variety, familiar and unfamiliar *Procedures*: Significant choice	Self directed Broad guidance Complete responsibility for own and work of others

HET	-*Knowledge*: Expert and highly specialized -*Information Processing*: Generation, evaluation, and synthesis of information and highly abstract concepts -*Problem Solving*: A range of concrete problem with some theoretical elements to redefining existing knowledge	*Contexts*: Unpredictable, highly specialized *Procedures*: Complex, highly advanced	

Level descriptors also facilitate the integration of the old qualifications system into the new NQF, as mentioned in the previous section. In October 2000, the SAQA gave accreditation for the existing qualifications interimly registered on the NQF to the appropriate SETAS in the Hospitality/Travel/ Gaming/Leisure sector, the Banking sector, the Clothing/Textile/Footwear/Leather sector, and the Media/Advertising/Printing/ Packaging/Publishing sector. Additionally, the South African Nursing Council was accredited for 11 of the existing qualifications and the Security Officers Board for the Certificate in Security Practices (Level 1 to 4).

Tables 8 and 9 show the conversion of existing qualifications into the NQF. In the Hospitality/Travel/ Gaming/Leisure sector, 27 existing Trade Certificates were interimly registered on the NQF by June 30, 2000. On October 11, 2000, 16 new qualifications were registered on the NQF.[56] In Table 9, some examples of 150 existing qualifications registered on the NQF converted into the NQF are illustrated.

Table 4.19. Conversion of Existing Qualifications in the Hospitality, Travel, Gaming and Leisure Sector into the NQF

Registration on NQF
1. Accommodation Services (Housekeeping)
2. Accommodation Services (Public Area Cleaner)

---

[56] South African Qualifications Authority, "The Development of Level Descriptors for the NQF," Discussion Document for Public Comment, *Government Gazette*, p. 43.

3. Accommodation Services (Laundry)	
4. Food & Drink Service (Bar Service)	
5. Food & Drink Service (Car very/Buffet Service)	
6. Food & Drink Service (Counter Services)	
7. Food & Drink Service (Drink Service)	
8. Food & Drink Service (Table Service)	
9. Food Preparation and Cooking (Fast Foods)	
10. Food Preparation and Cooking (Kitchen Cleaner)	
11. Food Preparation and Cooking (Kitchen Supervision)	
12. Food Preparation and Cooking Advanced Craft (Pastry and Confectionery)	
13. Food Preparation and Cooking Advanced Craft (Kitchen and Larder)	
14. Front of House (Portering/Concierge)	
15. Front of House (Portering)	
16. Front of House (Reception)	
17. Certificate: Food & Drink Services (Take Away Services)	
18. Certificate: Rooms Division Management	
19. Certificate: Accommodation Services (Housekeeping)	
20. Certificate: Food & Drink Service (Food Service)	
21. Certificate: Food & Drink Service (Table Service)	
22. Certificate: Food & Beverage Management	
23. Certificate: Food Preparation & Cooking	
24. Certificate: Hotel Management	
25. Certificate: Restaurant and Commercial Catering	
26. TDA (Training and Development Assessor)	
27. TDA (Training and Development Site Contract)	
Conversion of existing Qualifications into NQF	
1. National Certificate in Accommodation Services	Level 2
2. National Certificate in Food and Beverage Services	Level 4
3. National Certificate in Fast Food Services	Level 3
4. National Certificate in Gaming Cashiering	Level 3
5. National Certificate in General Travel	Level 5

6. National Diploma in Retail Travel	Level 5
7. National Certificate in Hospitality Reception	Level 4
8. National Diploma in Wholesale Travel Consultancy	Level 5
9. National Certificate in Gaming (Slots Operations)	Level 3
10. National Certificate in Gaming (Surveillance Operations)	Level 5
11. National Diploma in Accommodation Services	Level 5
12. National Diploma in Food and Beverage Management	Level 5
13. National Diploma in Fast Food Services	Level 5
14. National Diploma in Professional Cookery	Level 4
15. National Diploma in Professional Cookery	Level 5

Table 4.20. Conversion of Existing Qualifications in the Banking Sector into the NQF

Title	NQF Level
1. Administer and maintain a security information library	Level 2
2. Follow trading procedures in a treasury	Level 2
3. Perform administrative functions in the back office of a treasury	Level 2
4. Issue credit cards	Level 2
5. Capture entries onto a system	Level 3
6. Handle rejected money transfers	Level 3
46. Process electronic reports	Level 4
47. Monitor cash center reports and accounts	Level 4
80. Administer releases of units against a bonded property for development	Level 5
81. Monitor and audit releases of units against a bonded property for development	Level 5
130. Process authorized dealer's licence request	Level 6
131. Inspect and monitor advanced foreign exchange transactions	Level 6
147. Draft amendments to banking legislation	Level 7
148. Compile economic statistics and information	Level 7

6. Engineering Qualification System

This study is to focus on the role and function of INDLELA. There is a limitation of this research project in terms of the qualification system. The South African government already has introduced the new system replacing the old qualification system, but INDLELA still provides certification relying on the old qualification system. This is one of the reasons why this study deals with engineering qualification system. The second reason is that in order to compare the Korean Technical Qualification System with the South Africa Qualification System this project should investigate the engineering system of South Africa because the Korean Technical Qualification System concentrates it's operation in the engineering field. Third, the Engineering Qualification System could be considered a very important qualification system in a new qualification framework. Also in the future mutual recognition of qualifications can occur in the field of engineering qualifications. Ii is within context that this section was included.

As pointed out by the president of the Engineering Council of South Africa (ECSA), "engineering is the profession which makes the most significant contribution to national wealth and well-being."[57] In recent years, however, the engineering industry has been undergoing a period of severe recession, due mainly to a lack of investment in fixed capital. More critically, this is having an impact on the attractiveness of the engineering profession as a whole, as reflected in the total number of registered engineers remaining stagnant at about 24, 500 for the past four years (see Table 4.21).

Table 4.21. Number of Registered Engineers in South Africa*

Category	1996	1997	1998	1999
Professional engineers	14,646	14,730	14,933	14,957
Engineers in training	4,914	4,537	4,150	3,750
Professional technologists	1,769	1,835	1,910	1,984
Technologists in training	105	158	186	226

---

[57] Engineering Council of South Africa, *Annual Report 1998/9*, p. 5.

Registered technicians (master)**	769	717	682	646
Registered technicians	1,517	1,518	1,513	1,560
Technicians in training	193	222	230	346
Lift Technicians	17	54	89	112
Certificated engineers	671	695	709	741
Certificated engineers in training	34	43	50	53
Total	**24,635**	**24,509**	**24,452**	**24,375**

Source: Engineering Council of South Africa, *Annual Report 1998/9*, p.10.

* As of March 31 each year

** The "Master Technician" category of registration was discontinued when ECSA was established in 1990 - hence the gradual decline in their numbers. These persons were originally registered by the then Board of Control for Registered Engineering Technicians. Many have since registered as professional technologists (engineering).

Qualification in the engineering sector is classified into four levels: Professional engineers, Professional technologists (engineering), Registered certificated engineers, and Registered engineering technicians. As with many professions, the registration of engineers involves the attainment of an educational qualification followed by a period of training and gaining experience under a mentor. Professional engineers must hold a BSc (Eng) or B Eng, a local four year degree; Professional Technologists need a M. Dip Tech or B Tech (Eng); Registered Certificated Engineers need to hold a recognized government certificate demonstrating their competency[58]; and Registered Engineering Technicians need a N. Dip or recognized Nat. N-Dip.

In order to become a qualified engineer, eligibility requirements including field experience—referred to as "practical training"—have to be met, in accordance with the Engineering Profession of South Africa Act of 1990.

Table 4.22. Categories Registered by the Engineering Council of South Africa

Full Professional Categories	**"In Training" Categories**

---

[58] Certificates of Competency recognized in the Engineering Profession Act are Chief Engineer Officer (foreign-going), Electrical Engineer (factories, works, mines and works), Mechanical Engineer (factories, works, mines and works), and Mine Manager (metalliferous mines, coal mines). See the application form for "Registration as a Registered Certificated Engineer" issued by the ECSA.

Professional Engineer	Engineer in Training
Professional Technologist (Engineering)	Engineer Technologist in Training
Registered Certificated Engineer	Certificated Engineer in Training
Registered Engineering Technician	Engineering Technician in Training

In order to be registered as a trainee, a person must pass an examination recognized by the Engineering Council. Qualifications recognized by the ECSA are illustrated in Table 23 below.

Table 4.23. Qualifications Recognized by the ECSA

Recognized Qualifications	"In Training Categories"
BSc (Eng) or B Ing (local 4 year degree)	Engineering in Training
M. Dip Tech or B Tech (Eng)	Engineering Technologist in Training
Recognized Government Certificate of Competency	Certificated Engineer in Training
N. Dip or recognized Nat. N-Dip (50% pass rate)	Engineering Technician in Training

Source: Engineering Council of South Africa, "Acceptable Engineering Work for Registration," Policy Statement R1/1, June 23, 1994, p. 4.

Table 4.24 shows the minimum number of years of practical training required after meeting the educational requirement level.

Table 4.24. Minimum Period of Practical Training after Qualification

For Registration as	Qualifications	Period (No. of Years)
Professional Engineer	BSc (Eng) or B Eng	3
Professional Technologist	M. Dip Tech or B Tech (Eng)	3

(Engineering)		
Registered Certificated Engineer	Government Certificate of Competency	3
Registered Engineering Technician	N. Dip	2
	Nat. N-Dip	4

Source: Engineering Council of South Africa, "Acceptable Engineering Work for Registration," Policy Statement R1/1, June 23, 1994, p. 5.

As part of the registration procedure, the ECSA requires applicants to compile a training or experience report. Those applying to become professional engineers have to show how their experience covers the ECSA's requirements and the branch-specific guidelines issued by the ECSA. For instance, those in the mechanical engineering field are recommended to follow the course of basic training covering elements such as workshop training, maintenance, and plant operation, followed by training in design and management.[59] For civil engineers, an assessment of their work experience is conducted through a report of their training schedule as well as through a professional review, required for their admission into the South African Institute of Civil Engineers (SAICE).[60]

Applicants for registration as professional technologists (engineering) and registered certificated engineers must hand in an experience report outlining their level of responsibility or function. In the case of professional technologists (engineering) registration, the ECSA allows those who do not hold the minimum academic qualifications to make up for the difference by increased periods of both experience and responsibility. Acceptable experience for registration as professional technologists (engineering) include involvement at a satisfactory level in design, research and development, commissioning, project or construction management, measurement and testing, planning (engineering), quality assurance, production, maintenance, management, manufacture; detailed sketch plans and calculations showing the ability to identify engineering problems and to produce solutions; decision making at an intellectual level requiring mature judgment; and acceptance of full engineering responsibility for all work under his or her control.[61]

---

[59] For detailed information, see the Engineering Council of South Africa, "Branch Specific Guidelines: Mechanical Engineering."

[60] See the Engineering Council of South Africa, "Branch Specific Guidelines: Civil Engineering."

[61] See the application form for "Registration as a Professional Technologist (Engineering)" issued by the ECSA.

Similarly, for registration as engineering technicians, those who are not in possession of the regular educational qualification required may become eligible by providing proof that their experience has allowed them to perform at the level of engineering technician. Experience at artisan level nor mere post designations as engineering technician are not accepted under ECSA rules. Acceptable work should include functional elements such as technological knowledge, manipulative skills, mental skills, communication skills, personal and interpersonal skills, and supervisory and management skills.[62] Work experience must also fit the scope of the functions and the minimum level of skill at which each function is performed as advised by the ECSA.

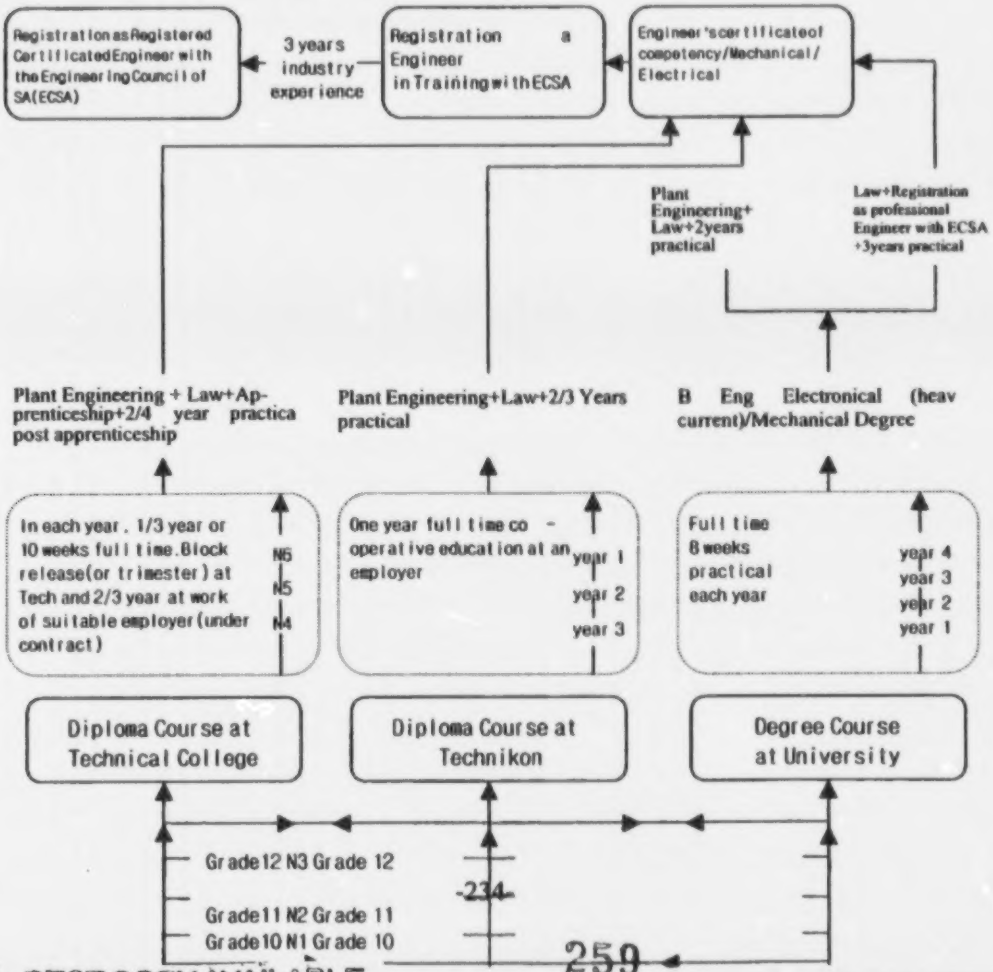
Alternatively, registered professional technologists (engineering) or certificated engineers who have performed engineering work for a period of 20 years holding a qualification equivalent to one recognized by the Engineering Council may also apply to become registered professional engineers. This Alternative Route examination involves an oral interview and is awaiting further deregulation in its requirements from the new Engineering Profession of South Africa Act.[63]

For example, Figure 4.11 shows the process to become a registered certified engineer in the field of electrical/mechanical engineering. There are three ways of entering the process to get certification as the registered certified engineer, starting from technical high school, technical college and academic high school. Each path requires a definite period of education and training at a formal educational institute and workplace. Also a certain period of practical experience is necessary to complete the diploma and degree courses. After finishing courses in the subjects of plant engineering (subject related to electrical and mechanical engineering) and law are required to be completed in addition to gaining practical experience of a specified duration. These are the conditions to become a certified engineer. But for a registered certified engineer an additional 3 years of industrial experience is required.

---

[62] For details, see the application form for "Registration as a Registered Engineering Technician" issued by the ECSA.
[63] *Ibid.*, p.10.

Figure 4.11. Process to Get Certification as Registered Certified Engineer in the Field of Electrical/Mechanical Engineering


Registration as Registered Certificated Engineer with the Engineering Council of SA(ECSA)
3 years industry experience
Registration a Engineer in Training with ECSA
Engineer's certificate of competency/Mechanical/Electrical
Plant Engineering+ Law+2years practical
Law+Registration as professional Engineer with ECSA +3years practical
Plant Engineering + Law+Apprenticeship+2/4 year practica post apprenticeship
Plant Engineering+Law+2/3 Years practical
B Eng Electronical (heav current)/Mechanical Degree
In each year, 1/3 year or 10 weeks full time.Block release(or trimester) at Tech and 2/3 year at work of suitable employer(under contract)
N6
N5
N4
One year full time co - operative education at an employer
year 1
year 2
year 3
Full time 8 weeks practical each year
year 4
year 3
year 2
year 1
Diploma Course at Technical College
Diploma Course at Technikon
Degree Course at University
Grade 12 N3 Grade 12
Grade 11 N2 Grade 11
Grade 10 N1 Grade 10

BEST COPY AVAILABLE

source : The Institution of Certificated Mechanical and Electrical Engineers, South Africa(2001)

Meanwhile, the new Act, being effective from late August 2001 saw the establishment of a new ECSA and new categories of registration.[64] Most notably, the Registered Engineering Technician have been deleted and changed into the category of Professional Engineering Technician. No new registrations will be offered in its previous form, and existing registered engineering technicians have to "upgrade" their registration by applying for registration under the Professional Engineering Technician category, which will have higher requirements. Furthermore, all categories in the engineering profession will undergo a change in their nomenclature. The existing categories of engineers, technologists, certificated engineers, and technicians will be referred to as Professionals, and those in the "in training" categories will change their name to Candidates. A general, autonomous category called Specified Categories will be generated under the new provisions of the Act. People registered under this category are likely to comprise those who have considerable depth of experience but lack the broad training of the professional categories. Examples include lift inspectors, metrologist, non-destructive testers, and pressure vessel inspectors.[65]

The Act, moreover, reinforces the formal participation of engineering professions in national initiatives of educational infrastructure such as the SAQA and the Council on

---

[64] Some implications of the revised Engineering Profession Act of 2000 are highlighted in the web-site of the ECSA. Available at http://www.ecsa.co.za.

[65] See the ECSA web-site, available at http://www.ecsa.co.za.

Higher Education (CHE). Currently, much effort is being made by both the Engineering Council, which authorizes engineer qualifications, and the SAQA in order to ensure the compatibility of the engineering qualification system with the new NQF. Many projects are being advanced toward this end. For instance, the concept of an Engineering Standards Committee (ESC) was introduced in an attempt to separate standard setting functions from assessment activities.

Changes have also been made at the practical level to accommodate the development of standards and supporting procedures toward building a competency-oriented system akin to the NQF. The ECSA has been accrediting university programs through formal evaluation visits since 1982. Instead of the inputs-oriented criteria used previously, the ECSA since its declaration in 1998 is reformulating its program descriptions and requirements for accredited engineering degree programs in the form of expected outcomes. This is based on a formal system of competency standards, in which a qualification is a collection of unit standards which are based on "outcomes" as evaluated against assessment criteria.[66] So far, three universities are due to have programs evaluated against the new outcomes-based criteria in 2001, based on their experience with the transitory interim criteria.[67] The ECSA plans to revise the accreditation policy and procedures for Technikon qualifications (N.Dip and B.Tech) toward an outcomes-focus following evaluation visits in 2000.[68] Additionally, generic Unit Standards for each category of registration have been prepared in draft format.[69]

As evident in the above efforts, the ECSA is deeply committed to cooperating with the SAQA to achieve the objectives outlined in the Engineering Profession Act. It has applied for recognition as a Standards Generating Body and under the auspices of the ECSA is already in the process of producing National Unit Standards for the generic and some specific components of Engineering for the purpose of their registration as NQF qualifications. This ensures that engineering standards and qualifications will be at the required level and be placed in an integrated and cohesive framework. The ECSA is also intending to play an active role in the quality assurance of higher education in engineering by applying for accreditation by the SAQA as an Education and Training Quality Assurer. There are also many economic sectors which strongly depend on engineering skills. Thus, the ECSA needs to develop a cooperative relationship with the engineering-rich SETAs which are also stakeholders in the ECSA's standards generating process and quality assurance.[70]

---

[66] Engineering Council of South Africa, *Annual Report 1998/9*, p. 12.

[67] "Notes on Accreditation of Higher Education Qualifications in Engineering," Prepared for the HEQC by ECSA, March 2000, p. 2.

[68] *Ibid.*, p. 2.

[69] Details can be found at http://www.ecsa.co.za.

National standards and maintaining quality become especially important in the ECSA's quest towards obtaining international recognition for its engineers. A move concerning mutual recognition of professional registration among signatories under the auspices of the "Washington Accord"[71] and further progressed through the "Hong Kong Working Party," leading to the formation of the Engineers Mobility Forum (EMF). The ECSA has received ratification from the Australian Institution of Engineers, the Institution of Professional Engineers of New Zealand, and the Institution of Engineers of Ireland. Obtaining full membership status is still pending on the ratification of the U.S. Accreditation Board for Engineering and Technology (ABET) and the Canadian Council for Professional Engineers (CCPE).[72]

The Washington Accord was revised in 1997 so that transitional arrangements can be made for the ECSA to achieve full membership within the next few years. Accordingly, the ECSA has set up an International Committee to keep up to date with and to address pending issues in the EMF, such as the requirement that all candidates have to be subjected to a professional interview to become registered engineers.[73] The introduction of professional reviews for civil engineers by the ECSA in 1998 was also an essential element of the Mutual Exemption Agreement (MEA) negotiations with the Institution of Civil Engineers (ICE) based in London.[74] The MEA was signed on June 18, 2001.

In March 1999, the ECSA embarked on a project to extend the professional reviews system to all other branches of engineering in the process of assessment of candidates for professional registration. After a year of research and consultation, the individual Professional Advisory Committees (PACs) of various engineering sectors announced a

---

[70] H. Hanrahan, "A Nationally Integrated Model for Qualifications, Registration and Licensing in the Engineering Profession," *South African Qualifications Authority Bulletin*, Vol. 4, No. 2 (November 2000), p. 38.

[71] The Washington Accord is an agreement among various countries to allow for mutual recognition of each other's accredited engineering degrees as meeting each member's own academic requirements toward professional registration.

[72] Engineering Council of South Africa, *Annual Report 1998/9*, p. 13.

[73] *Ibid.*, p. 11. ECSA was admitted as a full member of the Washington Accord in the 1999 meeting held in Sydney.

[74] The professional review constitutes a comprehensive review of the careers of engineers in training in the form of an interview, to assess the quality of their professional attributes and the level of competence achieved during their period of training.

BEST COPY AVAILABLE

common approach in installing the professional review requirement and recommended its implementation to take effect on January 1, 2001. Guidelines for the reviews are being prepared, while branch specific guidelines applicable to engineers in training remain in effect.

7. Analysis of Testing Results by INDLELA

Test results for artisans produced by INDLELA were examined in terms of the trends of numbers of candidates, successful candidates and pass rates from 1990 to 2000. Accordingly data analyzed here focused on the artisan qualification. Analysis was classified by qualification items and years.

Appendix 6 shows the overall picture of the number of candidates, successful candidates and pass rates from 1990 to 2000. Until 1993 the number of candidates accounted for over 10,000 persons, but since 1994 the number of applicants has decreased to below 10,000 persons. The lowest number of applicants has 7,966 persons in 1996. The number of candidates has steadily increased since 1996.

The average success rate is in the range of 48～60%, with an average pass rate of 55.7%. The highest pass rate was 60.1% in 1996, but this year also saw the lowest number of candidates. The pass rate since 1997 has not fallen below 54%, and has inly fluctuated by around 5%.

In terms of the number of successful candidates for the past 10 years, the highest was 7,371 persons in 1992, while the lowest number of candidates was 4,933 persons in 1998. The number of successful candidates increased until 1992, but the trend decreased until 1996. After 1996 the number of successful candidates gradually increased again until 2000.

Appendix 7 shows the list for trades with over 100 persons in terms of the number of candidates in 1990. By trade title, Electrician(qualification item) working in the Metal industry recorded the highest number of candidates followed by Filter and Turner also in Metal Industry, Motor Mechanic in the Motor Industry. 27 out of 306 qualification items had 100 candidates, which is included qualification items which exceeded 100 persons. 27 qualification items accounted for 68% of the total number of candidates and 62% of the total number of successful candidate, with 43% of average pass rate. Most of the qualification items were related to the occupational field of construction engineering, mechanical engineering, automobile and hairdressing. This trend was maintained 1990 through to 2000.

Appendix 8 shows the number of candidates in the range of 50-100 persons in 1990. 12 out of 309 qualification items belonged to this range which accounted for 7.8% total number of applicants. These qualification items were connected to the occupational fields of construction engineering, mechanical engineering and automobiles.

Appendix 9 shows the list of qualification items exceeding 100 persons in terms of the number of candidates in 1991. By trade title, Motor Mechanic recorded the highest number of candidates, followed in order by Electrician, Fitter and Turner. 29 out of 295 qualification items had in excess of 100 applicants. This figure was the 9,8% against the total number of qualification items and also accounted for 72.1% of the total number of applicants and 66.8% out of total number of successful applicants. The average pass rate of these qualification items stood at 45.7%.
Appendix 10 summarizes the qualification items showing the number of applicants between 50 and 100 persons in 1991. 17 out of 295 qualification items, 5.8% of the total, recorded an average pass rate of 49.3%, accounting for 9.3% of the total number of candidates and successful candidates. Mechanical engineering, construction engineering and construction vehicle were connected to these qualification items.

From the standpoint of the total number of applicants and successful candidates this study collected data from 1990 to 2000. Most of them already was explained above. Almost the qualification items lists and figures prepared each year showed similar trends in terms of the number of qualification items and the number of candidate more than 100 applicants. The proportion of the number of qualification items with more than 100 applicants, to the total number of qualification items each year falls in the range of 6.6% to 12.1%. If this range is considered in terms of the number of applicants, this range falls a fluctuation boundary between 58.7% and 73.6%. This means that around 10% of the total number of qualification items accounted for between 58.7% and 73.6% out of the total number of applicants between 1990 and 2000. A lot of qualification items less than 100 candidates have been in existence for more than 10 years.

The proportion of the number of qualification items in the range of 50～100 applicants to the total number of qualification items each year fell in the range 3.8% to 7.0%. This proportion corresponds a range of between 7.7% and 16.5% out of the total number of applicants from 1990 to 2000.

According to these results, a lot of qualification items didn't show a reasonable level of number of candidates each year. That is, those qualification items with a small number of applicants didn't efficiently and effectively operate and manage the qualification system. The main reason why these qualification items didn't have an adequate number of applicants is that these qualification items (certificates) didn't have practicability. Companies didn't want to hire those certificate holders because these certificates failed to meet industrial demands. Companies didn't require their worker to get these kinds of certificates. Also trainees didn't apply for these qualification items because these qualification items did not facilitate the transition to the job market effectively.

In order to ensure recover the practicability of a vast number of qualification items with fewer than 100 applicants, the contents of qualification items should be changed based on the results of job analysis. Also, testing methods will need to be adjusted according to the changes made to the contents of qualification items. This is an essential step to guarantee the quality of qualification items from the standpoint of the demand side. Qualification items should be made relevant to the needs of industry, thereby attracting interest from companies as they could see how such qualification items could improve their productivity. This would then stimulate interest on the part of trainees to acquire these qualification items as they would be in demand by industry. Thus, a "virtuous circle" would be created where qualification relevancy to the need of industry was providing a skilled workforce which in turn was raising productivity levels thus ensuring active participation by both companies and trainees in a successful national VET program.

V. Summary and Conclusion

1. Comparison–in the context of vocational training and technical qualifications in Korea and South Africa

Korea

There has been an increasing demand for skilled workforce in Korea over the last decade. The industrial structure of the economy has moved from a manufacturing base towards service sector base. The rapid advancement of technology and the globalization of trade and labor markets have resulted in changes in employment categories: an increase in non-regular workers; occupational change and the emergence of new occupations, and the downsizing of firms. During this time, the proportion of highly skilled workers increased, while unskilled workers declined.

It is anticipated that manufacturing's share of total Korean employment will continue to decline and employment growth will remain concentrated in the service sector. The demand for highly skilled workers will continue to grow in the future.

Korea is moving toward an OECD-type of mature economy through rapid industrial structural change. In response to the changing environment characterized by new technology and globalization, employers need to invest in the upgrading and reskilling of the existing workforce to ensure that their products remain competitive in the world market.

Vocational education and training

The largest element of Korea's system of vocational education and training is the system of vocational education at schools. Initial training (pre-employment training) is provided at the senior secondary level (vocational high schools) and post-secondary level junior colleges. Formal vocational education is administered by the Ministry of Education and Human Resources Development.

In 2001, there were 759 vocational high schools with a total enrollment of 651,198 which accounted for about 34.1 per cent of total high school enrollment. Most vocational students were taking programs in senior high schools of business/commerce and technology.

Post-secondary vocational education under the formal education system is provided at junior colleges, polytechnic colleges, technical colleges and polytechnic universities. There were 158 junior colleges with an enrollment of 952,649 in 2001.

The participation rate of adults in post-secondary vocational education is low. Only 9.1 per cent of junior college students and 19.7 per cent of polytechnic university students were aged over 25 years old in 1999.

Vocational training takes two forms, either public training or private training, depending on the type of training institute. Public training is provided at training centers managed by HRD Korea, KCCI, local autonomies and the KEPAD. It aims to train skilled workers in programs lasting three months to one year. Private training is provided at firms.

Vocational training programs are classified into 'initial (basic) training', 'upgrade (advanced) training', and 'job transfer training' depending on curriculum, duration and trainee profiles. With the implementation of the new training policy under the Employment Insurance System (EIS), most in-plant training schemes include 'advanced' courses, instead of basic training as tended to be the case under the levy system.

The implementation of the Second Educational Reform (including vocational education reform) Program proposed by PCER and the enactment of the *act on promoting workers' vocational training* in the 1990s made adult education and training an integral part of education and training in Korea.

The vocational education reforms proposed by PCER include:

- transformation of higher education institutes into lifelong educational institutions for people of all ages
- expansion of education opportunities for the employed
- building a foundation for lifelong vocational education

The *act on promoting workers' vocational training* includes:

- government financial support for employers who implement vocational training programs
- government support for employees who make an effort to develop their job skills
- government support for the unemployed who want to undertake training for re-employment

Various measures have been undertaken to implement the reforms to establish **a lifelong learning society**. The legal foundation for 'the era of open and continuing education' has been prepared. The legislation on the Credit Bank System in 1996 was enacted to allow part-time registration in colleges on a trial base.

Programs have been introduced to expand opportunities for employed workers to continue to study in higher education institutes. Polytechnic universities provide open and flexible curriculum and class schedules and are open to employed adults. Priority in selection is given to persons with experience in industry. The technical colleges (Universities) operated by companies are under review to facilitate their being recognition as formal higher education institutes. In order to encourage workers to upgrade their knowledge and skills, the government enacted the *act on promoting workers' vocational training*. As a result, the number of workers trained has increased since the implementation of the new training policy.

Qualification system

The qualification system in Korea can be divided into national qualification and private qualification. National qualification consists of national technical qualifications and other non-technical national qualifications. Private qualification also comprises two parts, authorized and unauthorized.

The current national technical qualification system is classified into 5 different levels: Professional Engineer, Master Craftsman, Engineer, Industrial Engineer, and Craftsman. The Service group is divided into Business Management and Other Services. Business Management has 3 levels (*geup*) and the Other Services group item has under it the two levels of Master Craftsman and Craftsman in 2 fields of work.

National technical qualification is currently under the control of 15 different government organizations, but the overall management is headed by the Ministry of Labor under the NTQ Act. The undertaking of the formulation of exam questions, the certification process, and registration are commissioned to the Human Resources Development Service of Korea (HRD Korea) and KCCI under an Implementation Decree of the same Act.

National Technical Qualification System administered by the Ministry of Labor has a close relationships with Credit Bank which is operated by Korea Educational Development Institute (KEDI) under the supervision of the Ministry of Education and Human Resources Development. The Credit Bank System seeks to improve upon the limitations of formal education by recognizing the various field experiences and training accumulated by an individual outside the school environment. It also provides motivation for life-long learning to people who have previously not had access to higher education. It was against this backdrop that the Credit Recognition Act was enacted, allowing national technical qualification acquisition to be equated with credits from a formal education institution.

In order to activate the private qualification system, the Korean government enacted the Basic Qualification Act on March 27, 1997. Pursuant to this law, a state-authorized private qualification system, drafted for the purpose of recognizing important and necessary private qualifications through a set of evaluation processes, was introduced. The task of evaluating applications of private qualifications for government authorization which started in full-scale in 1999 was undertaken by the Korea Research Institute for Vocational Education and Training (KRIVET). The government plans to amend the Basic Qualification Act to enhance the current procedures for the recognition of state-authorized private qualification.

Korea is participating in the "APEC Engineer Project," led by the APEC HRDWG (APEC Human Resource Development Working Group). Initiated by Australia, the project aims to develop measures to mutually recognize engineers of the region as "APEC Engineers". This project will lead Korean professional qualifications to internationalization in APEC.

The current efforts of the Korean government could be summarized as follows:
First, the government is trying to reform the national qualification system in order to

meet the demands of industry.

Second, policy for activating the private qualification market is being developed now.

Third, policy for strengthening the linkage between vocational education and training and qualification system is being prepared.

Fourth, policy for recognizing assessment results on vocational competency is being reinforced.

Finally, the government is strengthening international transferability of national technical qualification.

South Africa

South Africa is currently experiencing a shift in thinking from education for employment—developing the ability to do a specific job—to education for employability—developing the ability to adapt acquired skills to new working environments. This change in perception is leading to a broader transformation towards a longer-term HRD vision for life-long education through an accumulative credit-based qualification framework rather than the previous pass-fail system.\

The main feature of the new framework for national qualifications is its emphasis on the notion of learning outcomes. In fact, a paradigm shift is taking place in the South African education system, moving away from the previous focus on the content of curriculum to one that stresses outcomes: outcomes-based education and training (OBE).

The need for an outcomes-based system of education and training is driven from both domestic and international sources. Internally, in South Africa, the two main problems of the previous qualification system have been identified as unequal *access* and a lack of *transferability*. External imperatives, in the form of global trends, have heightened the recognition that traditional definitions of knowledge and education are increasingly undergoing system-wide changes in various parts of the world. At the center of such developments is the emphasis put on competence and outcomes. South Africa has also embraced these concepts through its introduction of the NQF, which stresses applied competence, defined as "the ability to put into practice in the relevant context the learning outcomes acquired in obtaining a qualification".

The NQF specifies the levels, bands and types of qualifications and certificates in education and training. It is composed of eight levels and can be divided into the three bands of higher education (levels 5-8), further education (levels 2-4), and general education (level 1), with levels 1 and 8 regarded as open-ended.

The unique feature of the South African NQF is its credit-based system of learning. It not only connects academic and vocational qualifications, but also acts as the chief facilitator of lifelong learning based on learning outcomes. Learning is recognized when a learner attains the required number and range of credits at a specific level of the NQF. Key words in the outcomes-based education and training system in South Africa are *standards* for NQF qualifications and *quality assurance* for learning and assessment provision. Quality indicators such as integration; learning outcomes; access, mobility, and progression; and personal national development are some of the criteria for judging the soundness of education and training. Learning and learning assessments are implemented based on these objectives.

Table 5.1: Comparison of VET and Qualification Systems in Korea and South Africa

	Korea	South Africa
VET system		
Initial training	Initial training is given at vocational high schools and two year junior colleges (public and private) under the formal education system, and at vocational training centers as non-formal education. Other initial training is also provided at workplace by employers	Apprenticeship and learnership system or vocational education and training courses leading to a NQF qualification
Relationships between initial and further training	Initial training and further training are not closely linked. Further training is provided at firms with financial support from employers. Initial training emphasizes generic knowledge and skills to learn new skills. Adults are encouraged to continue studying in post-secondary educational institutes	Linkages between initial training and further training is facilitated by the NQF. People can upgrade their skills by studying for a higher level of NQF
Qualification		

system		
Structure of qualification system	- There are two domains such as national and private qualifications. - National qualification consists of national technical qualification and national qualification of non-technical fields, operating under the national act. - Private qualification is divided into authorized private and pure private qualification. The former is managed by Basic Qualification Act, the latter has no legal basis.	- National Qualification Framework is a uniform qualification system which is credit-based. -There is an eight level qualifications framework (level 1 to 8) straddling 3 bands, viz. General Education and Training (GET - Level 1), further Education and Training (FET - Levels 2 to 4) and Higher Education and Training (HET - Levels 5 to 8, from Diploma to Doctorate levels).
Assessment	- Assessment is done by HRD Korea and KCCI under the National Technical Qualification Act of 1973. - Assessment is based on qualification standard prepared by HRD Korea and KCCI.	-Assessment is done currently by INDLELA in most cases, but also by certain SETAs under the old Manpower Training Act of 1981. - Assessment is based on national standard prepared by NSB and SGB. -Learner achievements are recorded on the SAQA National Learner Registration Database.
Standard setting	- HRD Korea manages 26 job categories composed of 570 qualification items. - KCCI manages 2 job categories composed of 40 qualification items. - Standards are prepared by HRD Korea and KCCI under the audit of the Ministry of Labor. - Standards are being updated every 4 years.	-Standard-setting has been done by National Standards Bodies (NSBs) and Standards Generating Bodies (NSBs). -The process of standards-setting is: the SETA, through its Education and Training Quality Assurance Body (ETQA) identifies the need for new standards, requests and existing SGB (or establishes a new one through the SAQA process), which functions under the auspices of an NSB (in the appropriate learning field) to generate those standards. The standards are submitted to the NSB for recommendation to the SAQA Board for approval. Each qualification has a 3-year review period.

2. Implications from the South African–Korean experience

In this section of the report a number of different elements of the experience of both countries are explored in the context of possible implications for the future development of vocational training and qualification systems in South Africa and Korea.

The vocational education and training systems operating in South Africa and Korea reflect the differences that exist in the economic and enterprise structures and industry profiles of the two economies, cultural differences and age profiles of the two countries. These differences are outlined in the different socio-economic profiles of the two countries discussed in section II of the report.

Notwithstanding these differences, the vocational training and qualification systems in both countries need to be responsive to economic changes of a similar nature occurring in both economies. These changes include the growth in the service sector of the economy that is taking place in both countries at the expense of the manufacturing sector; changes in the nature of work; and increasingly, the need for upgrading skills in the workplace.

1) Implications from the South African experience

Integration of education and training

In South Africa, education and training is integrated through a new learnership system. A learnership is composed of both structured learning and structured work experience, which are designed to complement each other in an integrated structure. It is critical that within each, theory and practice are combined – so that there are practical applications within the structured learning, and theoretical reflections within work experience. It is not simply a matter of timing the theoretical curriculum of structured learning to match the practical applications in the workplace. Each must take place within the other.

In Korea, formal education and workplace training has traditionally been separated. So the government has been trying to introduce a system to integrate workplace learning into the formal education system. The South African learnership system could be a model for Korea.

The National Qualifications Framework (NQF)

People can enroll in a VET program simply to gain skills from one or more modules (that is, subjects/short courses) or they can undertake a full program leading to a certificate or diploma qualification.

In South Africa there are eight different core VET qualifications being offered under a new comprehensive national system of education and training qualifications —the NQF.

The NQF was designed to provide consistent recognition of the outcomes achieved from education and training across all sectors of senior secondary schooling and universities. The NQF includes recognition of the integration of learning in the workplace with the incorporation of structured training into the system. Moreover, the NQF was designed to provide a clear and rational structure in which an increasingly deregulated training market can operate while maintaining credibility within the overall education and training system.

The NQF system in the VET sector is designed around a set of competency standards that need to be achieved in different training programs, rather than qualifications being set according to the amount of time taken to undertake a course of study. Thus, different people will take different amounts of time to complete any given VET qualification.

Students who successfully complete the requirements of a recognized course or program qualification with a registered training organization are entitled to a certificate or diploma under the NQF confirming this. Status or credit for subjects or units of competency completed with another training provider, or through recognition of prior learning, should be taken into account when determining entitlement to a recognized qualification. In most instances the certificate is issued by the registered training organization on application by the student.

The Korean government is trying to integrate workplace learning into the VET system through the amendment of the vocational qualification system. The South African experience suggests that the reforms take place in the broader context of the VET systems in Korea.

Relevance of Education and Training

In order to ensure relevance of education and training, SETAs have to identify skills needs. The skills needs could be shortages or gaps, and even those arising from employer practices.

SETAs identify skills needs through the development of a Sector Skills Plan. The Sector Skills Plan is a research based document which outlines the skills needs of an economic sector, industry or professional/occupational group. The needs identified become the basis for the development of learnership, skills programs, or qualifications. The process of developing the Sector Skills Plan is done in a collaborative manner by all stakeholders and key players in the relevant sector, industry or occupational group. The stakeholders at least include employers and organized labor.

Lack of a similar mechanism to identify skills needs to South Africa's is a major deficiency in Korea's current VET system.

Participation of Social Partners in VET

Today South Africa and other advanced nations adopt a cooperative approach to training, one which includes the involvement of employer associations, labor unions and other organizations. Together with the government they ensure that VET is responsive to the changing demands of the labor market.

At the national level, the National Skills Authority (which is an advisory body to the Department of Labor and monitors skills development policy and strategy) is made up of organized employers, organized labor, government departments and community groups, as well as education and training providers. At the sector level, the SETAs comprise organized employers and labor, and where applicable relevant government departments.

The participation of stakeholders ensures that all policies and strategies are enriched through diversified input, but also that policies and strategies enjoy the wide support of those who will be affected.

2) The implications from the Korean experience

Given the similar forces of change operating in the two economies, South Africa, in responding and adapting to these changes, can learn from recent Korean experience. Traditionally, private demand for education in Korea has been very strong. The high economic growth in the past three decades was characterized by substantial investment in human capital.

The government established an ambitious economic plan in the 1960s and restructured the vocational education and training system in order to supply the manpower necessary to implement the plan. As a result, most of the formal technical and education was provided within the state education system, and systematically planned and standardized.

High educational level

The average educational level of the population in Korea is already relatively high compared to that in other industrialized countries. In 2000, middle schools, even though secondary education is not compulsory, enrolled 99.9 per cent of the appropriate age group. About 99.6 per cent of middle school graduates moved on to high schools. Nearly 83.9 per cent of academic high school graduates and 42.0 per cent of vocational high school graduates advanced to institutes of higher education. Educational levels in full-time schooling and advancement to higher education in Korea are the highest in the world.

This high level of educational enrollment is in stark contrast to South Africa's relatively low level of school attendance. Until educational enrollment levels are raised, South Africa will continue to suffer from a shortage of skilled labor.

Encouragement of enterprise training–the Employment Insurance Scheme

Korea has operated levy schemes to encourage employers to invest in training. These schemes required minimum levels of employer training expenditure as a percentage of wages or contributions for collectively funded training. These schemes had been disbanded in both countries by the mid–1990s. However, in South Africa some industries, such as construction, still operate schemes of this type under the auspices of

State governments.

The Korean government introduced the Employment Insurance Scheme (EIS) in 1995. Vocational training forms part of this scheme and the contribution rate for the vocational training component of the system ranges from 0.1 per cent to 0.7 per cent of the total payroll depending on the size of the firm. The vocational competency development scheme under the EIS is an incentive scheme to induce voluntary training funded from the EIS fund. The scheme, which initially targeted firms with more than 70 workers, was expanded during 1998 to cover all enterprises, regardless of their size. Firms receiving support for vocational education and training costs can get up to 180 per cent (120 per cent for conglomerates) of the insurance premium paid that year.

Despite the incentives provided by the scheme, the scheme has had limited success in increasing the amount of training provided by small firms. Large firms have been the main beneficiaries of the training programs with 'windfall' gains accruing to large firms. Not all firms that contribute to the fund actually provide training for their workers.

However, the number of workers trained has increased since the implementation of the new training policy under the EIS. Notably, as previously mentioned, most in-plant training schemes include 'advanced' courses, instead of basic training as tended to be the case under the levy system.

Therefore, a scheme such as the EIS could be considered by the South African governments as a means of encouraging firms to provide higher-level training for their employees. The Korean experience suggests that, to be successful, a scheme of this type should be designed to include part-time and casual workers and older workers.

Lifelong learning

The results of this study indicate the value of high school completion and post-school qualifications for lifelong learning. Both the Korean and South African experience indicate that the better educated tend to participate more in training throughout life. As discussed, employers are more inclined to train the greater the increases in productivity of the employees trained. This study has shown that the better educated participate in longer training programs while the poorly educated tend to participate in shorter courses delivered on–the–job.

Korea has low rates of attrition from schooling before the completion of secondary school and high rates of entrance to tertiary education. Although increasing school retention rates has been a focus of South African governments, South African retention rates are much lower than those of Korea. Based on the higher school retention rates in Korea, it would appear that Korean students are better prepared for operating in an environment where lifelong learning is norm.

Vocational Qualification System

(1) Promotion of lifelong learning through a technical qualification grading system in the field of technology for workers who don't have an academic background. All workers and students can apply for the grade of craftsman which is the basic qualification grade under the vocational qualification system, connecting to higher qualification grades. There are no barriers in applying for the grade of craftsman. But higher qualification grades than craftsman have eligibility criteria, in terms of the period of practical experience, academic achievements and qualifications acquisition.

(2) Establishment of a unified national qualification system to deal with 590 technical qualification items under the National Technical Qualification Act. This Act integrates low level (craftsman) to high level (professional engineer) qualifications in the engineering field.

(3) Maintenance of consistency of the level of difficulty of exams and charging of reasonable application fees.

(4) Connection of vocational qualifications with credits in colleges and universities through a Credit Bank system.

(5) Authorization of private qualifications by government so as to enhance the quality of these qualifications under the Basic Qualification Act.

Implementation of Qualification Exam Testing

(1) Operation of item banks to systemize the management of questions

(2) Introduction of appropriate new qualification items according to industry demands

(3) Preparation of written and practical exams separately. Also practical exams consist of three types of exam according to the characteristic of qualification items, that is, written, mixed (written + practical), and practical testing.

(4) Construction of organization and operational system to deal with a massive number of applicants (over 3 million per year)
(5) Operation of INDLELA branch in each region

3) Suggestions for Future Role of INDLELA

The Department of Labor (DOL) should ask INDLELA, which has provided only the assessment for Artisan qualification since 1998, to change its role. The DOL will have to ensure that INDLELA is reformed if it wants to develop new policy for upgrading the national skill level.

INDLELA is responding to these requests step by step. The DOL is stressing the importance of skills development. Skills development policy is one of the major challenges for upgrading living standards, productivity levels and higher competitiveness in South Africa. This policy is required to prepare a new learnership system replacing the old apprenticeship system, which is limited to practical experience and neglects to include general knowledge. The learnership system is based upon the dual combination of structured learning in colleges, schools and training centers and learning experiences in companies.

The purpose of the learnership system is to enable students and workers to obtain qualifications which are closely relevant to the workplace. This learnership system can embody competences which are related to the employment in education and training institutes. Also outcomes from education and training will be assessed according to national standards whether learners meet the assessment criteria or not.

Learnerships are primarily workplace learning programs supported by structured institutional learning which result in qualification (INDELEA, 1999). These will be implemented mainly by SETAs. SETAs are central to the implementation of the Skill Development Act (no 97 of 1998) inasmuch as they are responsible for facilitating the development and implementation of education and training within their economic sectors.

SETAs are to develop a Sector Skills Plan to implement and promote learnerships. Also they are going to facilitate the assessment of technical qualifications.

Conditions surrounding INDLELA are changing so rapidly, as mentioned above. INDLELA should find its new position in the field of vocational education and training and assessment.

In terms of relationships with stakeholders INDLELA is located between the DOL and SETAs. INDLEA should search for its role and function under this relationship. It is expected that the new role of INDLELA will be divided into three parts; development of learnerships, employment-skills and labor assessment.

If we consider these categories, INDLELA can serve as a center for recognition, monitoring and assessment, as a center for implementing vocational education and training, and as a center for research on learnerships. Detailed roles in this context can be suggested as follows;

1) Center for recognition, monitoring and assessment

(1) Recognize and monitor the assessment center which is going to be established in each SETA

(2) Recognize and monitor the assessment centers located in regional areas

(3) Conduct the assessment on the qualification items which can not be operated by SETA appropriately.

2) Center for implementing vocational education and training through learnerships

(1) Provide training courses for trainers

(2) Provide training courses for assessors, moderators, verifiers

(3) Provide training courses for job analysts and skills development facilitators

(4) Provide training courses for creating SMME (including self- employment)

3) Center for research on qualifications and learnerships

(1) Develop new qualification items and assessment methods

(2) Preparation of testing for assessor qualifications

(3) Devise the strategy for expanding and supporting learnerships

4) Future Cooperation between Korea and South Africa

1) Mutual recognition of Korean qualifications and South African qualifications in the field of engineering:

(1) Professional engineer through EMF
(2) Engineer (Korea) vs. Technologist (South Africa)
(3) Industrial Engineer (Korea) vs. Technician or Artisan (South Africa)

2) Exchange personnel to create new ideas in the field of qualification systems and testing

(1) Exchange of information and personnel in the fields of vocational training and qualification
(2) Cooperative development of new testing methods to meet the demands from industry
(3) Development of strategies to achieve close linkage between vocational education and training and qualification systems through learnerships

REFERENCES

Korea

Chung, Taik Soo (1999). A scheme to promote in-company training, KRIVET, Seoul (in Korean).

Jang, Chang-Won et al. (1998). Industrial manpower outlook in Korea and policy implications, KRIVET, Seoul (in Korean).

Kim, Jang-Ho and Chang-Hee Won (1997). 'Human resources development in Korea: Evaluation of its policy and practices with Special Reference to ILO Convention NO. 142 and Recommendation NO. 150', unpublished paper.

Korea International Labor Foundation (1997). Labor reform in Korea towards the 21st century, KOILAF, Seoul

KOILAF (1999). Labor relations in Korea, KOILAF, Seoul

Korea Educational Development Institute (KEDI) 1999, Educational Indicators in Korea, KEDI, Seoul.

Human Resources Development Service of Korea 1997. Technical training, testing a employment promotion, HRD Korea, Seoul

Korea Labor Institute 1999, An evaluation of the Employment Insurance System KLI, Seoul, (in Korean),

Lee, Young-Hyun 1995, Social institutions and skill formation in manufacturing industry in Korea. A comparison with Japan, Ph.D. dissertation, University of Wisconsin-Madison.

Lee, Young-Hyun (2000), Technical and Vocational Education and Training in Korea, KRIVET, Seoul .

Lee, Young-Hyun et al. (2000). Adult Retraining and Reskilling in Korea and Australia, KRIVET and NCVER (National Center for Vocational Education Research, Australia)

Ministry of Education and Human Resources Development, Republic of Korea 2000, Education in Korea 1999–2000, Ministry of Education and Human Resources Development, Seoul.

Ministry of Education and Human Resources Development and the Korea Educational

Development Institute (KEDI), Republic of Korea 2000, Statistical yearbook of education, Ministry of Education and Human Resources Development and the Korea Educational Development Institute, Seoul (in Korean).

Ministry of Education and Human Resources Development, Republic of Korea 1999, Education in Korea 1999–2000, Ministry of Education and Human Resources Development, Seoul.

Ministry of Labor 1991–2000, The current status of vocational training programs, MOL, Seoul (in Korean).

— — (2000). Labor administration, MOL, Seoul, 2000.

— — (2000). Yearbook of Labor Statistics, MOL, Seoul (in Korean).

National Statistical Office, 1971, 19981, 1991, 1996, 1999, Economic statistics yearbook, NSO, Seoul, (in Korean).

— — 1996-2000, Economically active population report, 1996-2000, NSO, Seoul, (in Korean).

— —, Social Indicators in Korea, 1990, 1999, NSO, Seoul, (in Korean).

— — 1996, Estimation of future population, NSO, Seoul, (in Korean).

— — 1996, Report on the social statistics survey NSO, Seoul, (in Korean).

Oh-Young-Hoon and Hye-won Koh (1999). An Interpretation of the Act on Promoting Workers' Vocational Training, KRIVET, Seoul (in Korean).

Organization of Economic Cooperation and Development (2000). Pushing ahead with reform in Korea. OECD, Paris

The Presidential Commission on Education Reform 1997, Education reform for the 21st century, PCER, Seoul.

South Africa

Institute for the National Development of Learnership, Employment, Skills and Labor Assessment (1999). Recognition of Prior Learning (RPL) and You, Department of Labor.

Central Statistics Service (CSS) (1996). Labor Statistics: Employment and Salaries and wages: Public Sector March 1996, CSS.

________________ (1995). Living in South Africa, CSS.

Department of Education (1997). Adult Basic Education and Training, Depart of Education.

________________ (1998). Annual Report, Department of Education.

________________ (1999). A National Multi-Year Implementation Plan for Adult education and Training, Department of Education.

________________ (1999). Education Statistics in South Africa: at a Glance 1999.

________________ (1998). Education White Paper 4: A program for the transformation of Further Education and Training.

________________ (1999). Further Education and Training, Department of Education.

________________ (1999). National Strategy for Further Education and Training 1999-2001, Department of Education.

________________ (1999). Quality Education for All - Overcoming Barriers to Learning and Development, Department of Education.

________________ (1995). South Africa Qualification Authority Act.

Department of Education & Department of Labor (2000). A Nation at Work for a Better Life for All.

Department of Labor (1999). Assessment Training for Practioners, INDLELA.

____ _________ (1998). Institute for the National Development of Learnership, Employment, Skills and Labor Assessment: Report on Activities, Department of Labor.

________________ (1999). Labor Market Policy in the Era of Transformation, Department of Labor.

________________ (1997). Green Paper: Skills Development Strategy for Economic and Employment Growth in South Africa, Department of Labor.

________________ (2000). Towards a National Skills Development Strategy "Skills for productive citizenship for all".

Editors Inc. (2000). SA 98-99: South Africa at a Glance.

GTZ (1999). A Framework for Establishing Learnerships and Quality Assurance Functions of Sector Education and Training Authorities.

Human Science Research Council (HSRC) (1998). Education Research: New Directions, HSRC.

________________ (1999). Skills Needs of the SA Labor Market: 1998-2003, HSRC.

Lodge, Tom (1999). South African Politics since 1994, David Philip Publishers.

Maharaj, Gitanjali (1999). Between Unity and Diversity, David Philip Publishers.

National Business Initiative (1999). Annual Report 1998/99, National Business Initiative.

__________ (1999). Further Education and Training (FET) Colleges Collaboration Fund Business Plan 1999-2004, National Business Initiative.

National Economic Development and Labor Council (NEDLAC)(1998). Report on the

State of Soci`al and Economic Matters in South Africa 1997-1998, NEDLAC.

__________ (1998). Report to the Annual Summit -16 May 1998, NEDLAC.

National Training Board (1999). Skills Development Strategy: Demarcation of Sector Education and Training Authorities: Research Report, Department of Labor.

National Training Board and GTZ (1999). Education, Training and Development Practices Project, Department of Labor.

__________ (1997). National Qualifications Framework: Engineering and Manufacturing Process Pilot Project, National Training Board.

Regional Training Trust (RTT). Profile of the Regional Training Trust, RTT.

Republic of South Africa (1998). Government Gazette, Republic of South Africa.

Ross, Robert (1999). A Concise History of South Africa, Cambridge University Press.

South Africa Qualification Authority (1998). Final Draft National Skill Board (NSB) Regulations, Ministry of Education.

Sidiropoulos, Elizabeth, et al. (1998). South Africa Survey 1997/98, Central Center for Trade Testing.

Statistics South Africa (1998), Annual Report, Statistics South Africa.

________________ (1999). Official Statistics in the new South Africa - the First Five Years, Statistics South Africa.

Appendix 1: The Strategic objectives

Strategic objective 1: Improving the foundations for human development

Indicator	Indicative Action	Responsible Agent
1. Participation in Early Childhood Development (ECD)	- Register of 25,000 sites and audit of facilities compiled - Quality assurance of ECD curriculum - Increase participation in Grade R from 440,000 to 1 million learners aged 5-6	- Department of Education (DoE)
2. Literacy rates and participation in Adult Basic Education and Training (ABET)	- Establishment and functioning of SA National Literacy Initiative (SANLI) - Implementation of multi-year plan for ABET - DoL + all Sector Education and Training Authorities (SETAs) to work towards achievement of National Skills Development Strategy (NSDS) target of 70% of workers at NQF Level 1 by 2004	- DoE - DoE - Department of Labor (DoL - SETAs
3. Universal general education (9 years)	- Target compulsory attendance for learners between 6 and 15 years who are out of school	- DoE
4. Examination pass rates	- Continue with school effectiveness programs, targeted especially at schools that are performing at very low levels - Implementation of Whole School Evaluation policy - Ensure management posts are filled with trained staff - Promote the functioning of School	-DoE

	governing Bodies - Promote and support teacher development programs - Weed out non-performing teachers - Improvements in school infrastruc-ture and security	
5. Maths and Science results	- Increase number of candidates enrolling for these subjects, especially at the Higher Grade - Identification and training of suitable teachers for these subjects - Intervention strategies	- DoE

Strategic Objective 2: Improving the supply of high-quality skills (particularly scarce skills) which are more responsive to societal and economic need

Indicator	Indicative Action	Responsible Agent
6. Learning in areas of scarce skills at both higher and further education and training levels, especially in the fields of Science, Engineering and Technology	- SETAs nominate high level scarce skills for each sector - Provincial Skills Development Forums (PSDF) nominate high level scarce skills for each province - Addition input from Department of Trade and Industry (DTI) and Department of Arts, Culture, Science and Technology (DACST) - Departments collaborate to propose list of scarce skills to National Skills Authority (NSA) - NSA recommends allocations from National Skills Fund (NSF) for 'Scarce skills' bursaries - Providers and learners identified and matched - Private sector encouraged to provide work experience	- DoL - SETAs - PSDFs - DTI and DACST - DTI, DACSCT, DoL, DoE - National Skills Authority

7. Participation of adults in FET programs	- Targeted selection programs to identify and promote participation by adults - Financial support where needed	- DoE
8. Enrolments in HE institutions	- Active recruitment strategies for local and foreign students - Bursary assistance	- DoE - Universities and Technikons
9. Distribution of learners across HE institutions	- Management plans by institutions for local and foreign students - Promote building on strengths through program funding	- DoE - Universities and Technikons
10. Distribution of learners between Further and Higher Education institutions	- Improve quality of labor market information and incentives to learners when they make subject/career choices for higher education and further education to improve take-up in scarce skills areas. - Put in place 'program funding incentives' to encourage providers to promote targeted programs in selected institutions	- DoL and DoE - DoE
11. Retention of skilled labor and recruitment of foreign skilled workers in the short-term	- Monitor emigration of scarce skills - Facilitate importation of approved scarce skills from other countries through finalisation and implementation of new legislation	- Department of Home Affairs
12. Placement of FET and HE graduates in employment	- Improved placement rates in employment	- DoL - NSA

Strategic Objective 3: Increasing employer participation in lifelong learning

Indicator	Indicative Action	Responsible Agent
13. Labor market changes 14. Private sector commitment to skills development 15. Youth unemployment 16. Unemployment levels	Private sector firms prepare and implement Workplace Skills Plans. National Skills Development Strategy success indicators 1 and 2 are met.	- DoL and SETAs
	Private sector contracts with learners for new learnerships and placements under 'scarce skills programs'	
	At least 20 private sector firms per sector achieve national People Development standard by April 2005. (NSDS Target 1)	- SETAs - DoL
17. Public Sector education and training to support service delivery.	Department of Public Services and Administration (DPSA) and Public Services Education and Training Authority (PSETA) specify TRANSVERSAL skill areas that are a priority for the public service – in consultation with other government departments. - SAMDI and other providers prepare to deliver programs in short-term - PSETA manages SAQA standard setting and qualification design, curriculum and materials development, assessor training and registration, provider accreditation. Also undertakes monitoring and evaluation through WSOs. - All government departments specify FUNCTIONAL areas that	- DPSA/PSETA - All government departments informed by their line function SETA.

	are critical for service delivery, taking due account of relevant Sector Skills Plans. - In short-term existing programs used. In longer-term, government departments with their line SETAs ensure standards etc. available for functional training. All government departments prepare Integrated Workplace (Department) Skills Plans including both TRANSVERSAL and FUNCTIONAL skill priorities drawn down from service delivery targets. - Departmental training budgets aligned to skills plans. - Workplace Skills Plans submitted to both PSETA and line-function SETA for quality assessment against public service and sector priorities respectively. - Plans implemented, monitored and evaluated (NSDS target 2) At least National Departments achieve national people development standard (NSDS Target)	
18. Skills development for SMME sector	- DTI to convene meeting of departments with programs for SMMEs. - Improved alignment between programs to be interrogated and synergies achieved - Integrated model designed, developed and piloted. Could be focus on upgrading local advice centres and streamlining (and	- DTI - DACST - DoL + SETAs - DoE - National Treasury - All government departments with SMME programs

	increasing) resource availability and training/ mentoring facilities. - Linkages to sector and provincial structures established. Sector programs driven by government department, e.g. training of independent contractors in Public Works, located within integrated model.	
19. Social Development initiatives	- Framework for co-ordination designed and implement – located in the Office of the Premier in each Province. - National Skills Fund for skills development linked to local and provincial economic development managed by the DoL in each province. Labor Centres a resource for the support of skills development at provincial and local level. (NSDS target 4) - Other resources include DoE Colleges and higher education institutions. - Additional funds in different government departments mobilised and used to achieve maximum impact. - Pilot sites identified - Support for Social Plan a major focus (e.g. identify where retrenchees can reenter the labor market and train them for it)	- Premiers' Offices supported by DoL and all government departments

Strategic objective 4: Supporting employment growth through industrial policies, innovation, research and development

Indicator	Indicative Action	Responsible Agent
20. Expenditure on research and development	- Improve the application of scientific knowledge and appropriate technologies that solve key social and economic problem in society - Increase the number of 'knowledge' partnerships between FET, HET and industry - Increased State role to ensure FET and HET institutions are responsive to social and economic needs	- DoE - DoL - DACST - DTI
21. Number of Science-Industry Partnership	- Current low levels of Science-Industry partnerships must increase through more proactive state leveraging and steering in pursuit of linkages between FET and HET institutions, Science Councils and industry and other key sectors of the economy	- DACST - DTI - DoE
22. Identification of economic sectors with significant growth and employment potential	- Cluster 'Studies being developed by DTI, Foresight Initiatives of DACST and Sector Skill Plans of SETAs (DoL) need to be integrated and analysed to assist in the identification of clearer indicators of emerging and declining economic sectors and their concomitant education and training implications	- DTI - DoL - DACST - DoE

Strategic objective 5: Ensuring that the four strategic objectives of the HRD strategy are linked

Indicator	Indicative Action	Responsible Agent
Collection, analysis and dissemination of data in relation to the HRD strategy	HSRC to collect data on overall strategic indicators, and on identified and approved support indicators, and to use this to inform and monitor HRD planning	- HSRC
Effective functioning of SETAs in all economic sectors, including the Public Service	- State Departments participating in relevant economic SETAs, and supporting financially - Sector Skills Plans influenced by Government Departments, and used by them in planning processes - Sector Skills Plans used to inform training needs, and for the development of appropriate learnerships - All State Departments to participate in the Public Service SETA (PSETA)	- All State Departments
Mechanisms established to enable Cabinet and its support structures to monitor activities	- Establish core team to collect and analyses data and prepare reports for Cabinet - Core team to develop and disseminate information for Ministerial speeches and events to ensure systematic and consistent presentation of public policy	- DoE - DoL
Mechanisms established to win commitment to HRD strategy from private sector, trade unions and other key stakeholders	- Agree arrangements to involve social partners	- HRD Coordinating Committee

Appendix 2: Skills for productive citizenship for all

1. Our Vision

The title of this consultative document – skills for productive citizenship for aoo – summarises our vision for the future. By this we mean:

- skills: financial and other support should be directed towards the acquisition of skills that are needed by employers and communities and that increasingly will reflect qualifications and standards that are part of the National qualifications Framework. Skills development is about enabling and empowering individuals through the acquisition of competencies that are in demand. It is not about the provision of diversionary activities simply to keep unemployed people active for short periods of time or about merely filling programs offered by training providers. Skills must be linked to quality provision and qualifications (either in whole or part) that hold currency throughout the country
- productive citizenship: the concept of citizenship in South Africa has been understood mainly in political terms – " the right to vote" and to be consulted. But poor people particularly have discovered the ability to vote is not enough on its own. Citizenship must also include the right to actively contribute and participate in making decisions that affect investment and work. Skills development is as much about building the capacity of our people to engage in these decisions as to execute the roles and functions that will flow from them. In the workplace the decisions are about productivity, the organization of work and technology; in new and small enterprises they are about entrepreneurship, sustainability and growth and in communities they are about the focus, pace and trade-offs linked to local economic development.
- for all: the vision is an inclusive one. Although objectives and priorities are defined we seek to create opportunities for those in work as well as for the unemployed; for new entrants to the world of work as well as for older people; for women as well as men and for people with disabilities who for woo long have not been valued for their capabilities.

1.2 This Vision is underpinned by five guiding principles:

- the promotion of equity: there are not only legacies to be erased but positive interventions are demanded if we are to build an inclusive society and widen opportunities. In recent years there has been a net decline in the number of black people in jobs. Of our 40 million people only 20 percent have jobs in the formal sector. Of the 4.6 million people who are unemployed, 4.2 million are black and 58 percent are women. Through skills development we need not only to provide opportunities for disadvantaged groups but also encourage effective collaboration amongst people from diverse backgrounds

- demand-led: for too long skills development has been pursued in the absence of a realistic assessment of what the country needs. The emphasis will be on the skills and competencies required to support productivity, international competitiveness, the mobility of workers, self-employment and meeting defined and articulated community needs
- flexibility and decentralisation: the role Government and the National Skills Authority is to provide the framework, direction and coordination for the skills strategy and to monitor its implementation. Public and private employers and workers with experience of sector and community needs and trends are best placed to make judgements about demand and to determine the most effective providers to meet those needs
- partnership and cooperation: at national, sector, provincial, community and workplace levels the definition and implementation of the skills development strategy should be based on partnerships between and amongst the social constituencies
- efficiency and effectiveness: the delivery of skills development programs and initiatives must be characterised by cost-efficiency and should lead to positive outcomes for all those who invest in training and skills development.

1.3 The National Skills Authority proposes the following mission statement to encapsulate the goals of the national skills strategy:

To equip South Africa with the skills to succeed in the global market and to offer opportunities to individuals and communities for self-advancement to enable them to play a productive role in society.

1.4 To fulfil this mission five objectives have been identified to drive the national skills strategy:

- to develop a culture of high quality lifelong learning
- to foster skills development in the formal economy for productivity and employment growth

- to stimulate and support skills development in SMMEs
- to promote opportunities for skills acquisition in development initiatives
- to assist new entrants into employment in the labor market

1.5 These objectives will determine the priorities of the National Skills Authority and the recommendations it makes to the Minister of Labor about allocations from the National Skills Fund. They will also set priorities for the Sector Education and Training Authorities. The objectives offer priorities around which Government, employers, trade unions and the wider community can unite to achieve the skills revolution the country so badly requires.

1.6 The skills strategy is designed to support economic and employment growth and social development.

2. The Context

2.1 Throughout the world a number of factors influence the ways in which industry, commerce and services are organised, and all aspects of the world of work are subject to increasing rates of change. South Africa is not isolated from these and amongst the most important influences for change are:

- globalisation: the recognition that no single national economy is immune from the pressures of competition and the opportunities to function in a worldwide market. Currently South Africa has a poor record in terms of its international comeptitiveness. In the World Competitiveness Yearbook it is ranked at the bottom of a league of 47 countries for economic literacy, its education system, unemployment, skilled labor and the availability of information technology skills.
- the demand for higher skills: technological developments and dramatic changes in the accessibility of information have led to a demand for higher skills. This phenomenon has been seen in South Africa where between 1970 and 1998 high skilled jobs have increased by nearly 20 percent. During the same period the number of unskilled jobs fell by a similar proportion, though by a far greater number. This trend will continue.
- structural changes: the nature of national formal economies is also changing, with less reliance on industries based on agriculture and mining and growth in service related industries. Between 1970 and 1995 there was a net decline in jobs in agriculture and

mining in South Africa, some slight growth in manufacturing but a significant increase in jobs in the financial sector.

- organization of industry and business: the demand for efficiency and effectiveness has resulted in changes in business organization with flatter and more intergrated structures and a greater emphasis on team working rather than on hierarchies.
- growth of small businesses: in all developed economies the largest group of employers is made up of small and medium sized businesses and it is this sector that has generated the most jobs in recent years. In 1997 the SMME sector in South Africa absorbed nearly 57 percent of people employed in the private sector and contributed 42 percent of the gross domestic product. There is potential for increasing the number of small businesses and generating new jobs.
- societal changes: economies and the labor markets have to adapt to changes in society. For example, many countries are experiencing significant demographic changes. The most important challenge that faces the labor market in South Africa is the incidence of HIV/AIDS since it is the 15 – 45 age group that is most likely to be affected and hence the demands for skills development and training will increase rather than diminish. There is also a causal relationship between unemployment and crime. The imperative of improved social cohesion suggests that people who would be otherwise unemployed and prey to a variety of temptations should be assisted into jobs, self-employment or further education and training.

2.2 These various factors influence national economies in different ways and their impact on individuals will take different forms. But a number of trends are discernable and these will impact on our economy and labor market:

- demands for skills and a better educated workforce will increase rather than diminish across the total range of sectors and occupations
- structural changes in the labor market will not be reversed and will probably accelerate
- skills development will be increasingly a life-long commitment since the pace of change will accelerate.

2.3 These trends have been recognised in reforms that are being introduced in education at all levels. The skills development legislation and the establishment of organizations such as the South African Qualifications Authority are recognition of the need to invest in education and training and to assure that there is quality provision. We also need to accept that education and training are not restricted to the years of formal education or to the training that people receive when they first begin work.

2.4 There are a number of challenges to be addressed:

- We have only three million skilled and highly skilled people as opposed to seven million trapped in semi/unskilled work. Compared to middle-income and advanced industrial countries, South Africa faces specific shortages of professional managers, technicians, craft and skilled workers.
- Of the four million plus people who are unemployed, some 50 percent are young people who have completed more than nine years of schooling. Youth unemployment is aggravated by the inadequate provision of technical and vocational education and training opportunities. Just one percent of secondary school students are enrolled in technical/vocational institutions. In the countries of the OECD, 50 percent of secondary school-age students are in technical and vocational education programs.
- Many small businesses in our country are 'informal' and fall outside regulatory and taxation arrangements. In practice, many are trapped at the low-value-adding end of the production spectrum. The challenge is to assist these enterprises to climb the value chain and this will require skills.
- Public services at national, provincial and local government levels need the skills to implement the policies and programs that have been introduced to improve living standards and reduce levels of poverty. There is a need to give effect to the principle of customer-care. Public services need to be provided in cost-efficient and effective ways and a greater spirit of professionalism should permeate the public sector.
- whilst many employers have provided skills development opportunities for their staff, a commitment to training has not characterised the South African labor market. An ILO Country Profile of South Africa reported that although 87 percent of a sample of manufacturing companies claimed to provide skills development opportunities, 70 percent in practice offered only induction and initial training. The same report suggested that 40 percent of employers provide no training at all.

2.5 It is against this background that the National Skills Authority has derived its five objectives. The Authority also proposes that targets or success indicators should be agreed for each of the objectives. Targets are valuable since they:

- provide something to aim for. As such the targets should be stretching – even ambitious – but feasible
- focus activity and effort rather than dissipate and fragment them
- enable progress to be measured and assessed. One implication of setting targets is that baseline data for each will have to be established.

2.6 Central to the achievement of objectives and targets is the pursuit of equity. The social cohesion and elimination of poverty for which our society yearns will not be achieved without tackling endemic problems of racial and gender inequalities and negative discrimination. The following targets are therefore proposed for the beneficiaries of learnerships and other skills development programs:

- 85 percent to be black
- 54 percent to be female
- 4 percent to be people with disabilities.

2.7 The notion of life-long learning is one of the key principles of the South African qualifications Authority and it is a recognition that individuals should have opportunities for self-improvement at any stage of their lives, be they employed, unemployed or seeking a first job. As the economy grows and develops so new skills will be demanded and people will need to be retrained for them. The provision of opportunities to learn at any age also guarantees second chance opportunities for people, who for a variety of reasons, may have 'missed out' previously.

2.8 Building a culture means changing current negative attitude and encouraging employers and individuals to accept skills development as an investment rather than a cost. The new levy-grant system is designed to provide incentives to employers to train and workplace plans have been introduced to encourage workers and staff to take staff development issues seriously. However helpful the legislation may be in helping to shape attitudes, the objective must be to look beyond compliance with legislation and embed a commitment to the development of people and their skills as a national goal. Around the world, companies, individuals and communities are reaping the benefits of investing in their people. This commitment and culture must be built in South Africa as well.

2.9 There must also be a commitment to quality so that standards can be raised continually, so that qualifications have a national and international currency and that people can be confident that the investment made in skills development is worthwhile. The new Sector and Education Training Authorities, together with professional and other bodies, have a statutory duty to promote quality and to monitor standards.

2.10 The skills development legislation and the projects and programs of the Labor Market Skills Development Program being implemented by the Department of Labor are designed to win irrevocable changes in attitudes towards occupationally directed education and training or skills development. The Department is committed to promoting an agreed upon, national standard that will be a benchmark to assess the commitment of companies and organizations to the personal development of their staff.

2.11 Too many people were denied access to general schooling when they were young and hence cannot easily take advantage of new learning opportunities. Helping adults to reach the starting block (NQF 1) is a prerequisite for further learning.

2.12 Between 1970 and 1995 formal employment grew by 17 percent. Over the same period the workforce expanded by 36 percent. During this period the number of jobs filled by black Africans actually declined. There was also a net loss of jobs for people with little or no education and a dramatic increase in jobs filled by people with tertiary education. The formal sector of the economy could grow by becoming more productive and competitive and in this way, not only secure employment, but also generate new jobs.

2.13 A stronger skills base should help to attract new, foreign investment to the country. There is also scope to find and expand new markets and to exploit technological innovation, research and development to create jobs. Although some industrial processes will continue to be capital intensive, there are sectors that will require more people if they are to be successful. There is potential for growth in the services sector, in tourism and in cultural industries.

2.14 The skills development strategy seeks to encourage employers to see people as the key to growth. The introduction of Workplace Skills Plans is the vehicle to align skills development with both business growth strategies and equity plans. Employers accessing skills development grants will signal and indicate their involvement in, and compliance with, the legislation. In the public service as well, Workplace Skills Plans can give focus to skills development for improved service delivery.

2.15 Traditionally the only focus for skills development in the formal economy was the individual firm. This is still vitally important but increasingly firms are embedded into production networks, and the value-chain is constructed across a sequence of inter-dependent firms. The output of one firm is the input for the next. Industry and sector-wide initiatives can help the chain to be stronger. The sector summits seek improved industrial strategies. Their implementation can be supported and enhanced through skills development initiatives that will enhance productivity, labor mobility and the portability of skills.

2.16 Currently just under 72 percent of all private sector enterprises in South Africa employ four people or less. International experience suggests that the most potent source of new jobs is likely to be in the small enterprise sector. For example, the dramatic growth in jobs in the United States of America in the last five years has been in small enterprise start-ups. Outsourcing and the sub-contracting of non-core business by larger enterprises creates opportunities for new and small businesses. In South Africa there has been too great a tendency to equate small business development with survivalist activities and those of the informal sector of the economy. This is a mistaken view. For example, many of the highly successful computer and IT companies that won international recognition are small enterprises. New, small enterprises are well placed to develop new technologies and to exploit commercially the results of research and development activities.

2.17 Opportunities also exist for collaboration with social development initiatives, such as community based public works programs, Working for Water and youth development programs. While these may not be seen primarily as small business development opportunities they provide a fertile ground for the identification of people with entrepreneurial talents.

2.18 Skills development is one component of a strategy to stimulate business start-ups and the growth of small enterprises. Small businesses need access to credit, business support and advice and assistance in product development and marketing and exporting. The Department of Labor will work closely with the Department of Trade and Industry and other Departments and their Agencies to stimulate small business development.

2.19 In his address to the nation at the opening of the 2000 session of parliament, President Mbeki spoke of the need to integrate development initiatives to maximise their impact. Such development interventions are those that improve the quality of life of the poor, that secure basic services and infrastructure and which lay the foundations for rising standards of living through access to new forms of income generation.

2.20 In the many programs that have been launched and are planned, such as the strategies for integrated, sustainable rural development and urban renewal, the Spatial Development Initiatives and local economic development programs, there is the potential to build into these a stronger skills development component. Inevitably some development interventions are of relatively short duration but they can designed and organised to ensure that people involved in them are equipped with the competencies to find jobs, to establish their own businesses or to continue to support their communities in practical ways after development projects have been completed.

2.21 Thus in the design of community-based public works programs, the building of houses, roads and the up-grading of schools, skills development should be an integral component. The development of the human infrastructure is just as important as making improvements to the physical one and central to both is sustainability.

2.22 A component of the National Skills Fund will be devoted to social development activities and the provision of practical assistance to unemployed and under-employed people. The National Skills Authority is already requiring that greater scrutiny be given to the selection of projects to be supported so that skills development is a primary focus.

2.23 To achieve this objective will require cooperation between Government Departments, Development Agencies and Non-Governmental Organizations at national, provincial and local levels. It will also require the expertise to plan and organise social development projects in such a way that skills development is integral to the activity and that people have the opportunity to acquire qualifications that are accredited within the National Qualifications Framework and thus lay the foundations for life-long learning.

2.24 There are many groups within South Africa that might make eloquent claims to be treated as priorities. The national Skills Authority believes that those leaving education merit special consideration and support for a number of reasons:

- Young people represent the future labor force and equipping them with skills is key for a well-functioning labor market.
- A high proportion of the unemployed are young and nearly half of all unemployed people have nine or more years of education. Not to build on this foundation is wasteful in human and economic terms.
- In 1999 only 49 percent of those who sat the matriculation passed. The remaining 250,000 young people have no qualifications.

2.25 The new learnership program, although not restricted to young people, will offer them the opportunity to learn skills that are in demand and it should be feasible to expand the number of learnerships to a significant scale in a short period of time. The development of support programs for young people will also involve improvements in information and access to guidance and placement services. These are matters that the Department of Labor, supported by the National Skills Authority, is taking forward.

2.26 Young people are not the only new entrants to the labor market and the overall targets propose that key beneficiaries of the skills development strategy should be women and people with disabilities. There are far more women who are not economically active compared to men. The skills strategy will seek actively effective ways to enhance the employment prospects of women. Similarly, more active measures are required to ensure that people with disabilities are provided with job opportunities, either through sheltered or supported employment or placement in the open labor market.

[Appendix 4] Total Number of Candidate and Successful Candidate According to Occupational Field from 1974 to :

ccupation fie	no. of candidate(persons)					no. of successful candidate(persons)					pass rate				
	rofessiona engineer	master craftsmar	engineer	industrial engineer	craftsman	rofessiona engineer	master craftsman	engineer	industria engineer	craftsman	professiona engineer	master craftsman	engineer	industrial engineer	craftsman
achinery	10.818	13.254	274.152	949.010	#########	1.810	3.295	41.707	#######	#########	16.73%	24.86%	15.21%	16.42%	21.93%
etal	862	1.124	57.945	65.342	329.648	266	309	11.497	10.055	83.279	30.86%	27.49%	19.84%	15.39%	25.26%
chemical enginee and ceramics	1.589	244	32.086	28.312	762.498	426	54	4.187	5.040	149.395	26.81%	22.13%	13.05%	17.80%	19.59%
electricity	12.680	1.851	490.151	660.183	#########	811	476	69.069	77.351	303.241	6.40%	25.72%	14.09%	11.72%	27.19%
electronics	721	757	35.265	95.044	#########	121	119	5.389	12.591	376.546	16.78%	15.72%	15.28%	13.25%	27.89%
communication	2.923	81	151.746	524.056	#########	286	9	19.189	72.050	540.095	9.78%	11.11%	12.65%	13.75%	27.54%
shipbuilding	327	—	3.948	3.865	14.237	141	—	687	605	6.585	43.12%	—	17.40%	15.65%	46.25%
aviation	78	31	2.086	8.684	125.083	34	1	408	679	30.932	43.59%	3.23%	19.56%	7.82%	24.73%
civil engineerin	70.292	—	364.821	200.633	447.103	6.833	—	61.189	26.264	110.386	9.72%	—	16.77%	13.09%	24.69%
architecture	61.829	168	550.736	461.020	649.715	5.889	39	73.293	52.909	192.758	9.52%	23.21%	13.31%	11.48%	29.67%
textile	176	29	3.150	10.869	71.095	64	20	481	2.347	35.111	36.36%	68.97%	15.27%	21.59%	49.39%
ining resource	748	2	33.724	21.152	149.588	168	2	3.144	2.188	33.711	22.46%	100.00%	9.32%	10.34%	22.54%
information proc	4.801	—	466.453	736.142	#########	548	—	85.346	#######	241.923	11.41%	—	18.30%	13.96%	13.86%
land development	5.090	—	138.697	134.899	53.203	673	—	20.025	20.480	20.061	13.22%	—	14.44%	15.18%	37.71%
agriculture and	1.168	6	39.706	81.477	144.414	506	3	6.555	10.465	71.508	43.32%	50.00%	16.51%	12.84%	49.52%
ocean and fishin	227	—	9.675	13.605	13.263	79	—	2.368	3.220	7.772	34.80%	—	24.48%	23.67%	58.60%
industrial desig	23	—	919	8.404	169.553	5	—	116	1.015	18.907	21.74%	—	12.62%	12.08%	11.15%
energy	1.180	—	45.879	9.649	—	401	—	8.754	585	—	33.98%	—	19.08%	6.06%	—
safety managemen	12.544	724	719.553	733.590	603.642	1.252	235	#######	#######	45.149	9.98%	32.46%	16.58%	13.97%	7.48%
environment	5.290	—	270.589	287.142	41.044	562	—	37.165	44.855	9.520	10.62%	—	13.73%	15.62%	23.19%
applied industry	2.704	—	111.057	125.787	593.679	685	—	23.120	22.653	71.723	25.33%	—	20.82%	18.01%	12.08%
transportation	1.337	—	10.625	280	—	219	—	1.253	4	—	16.38%	—	11.79%	1.43%	—
pottery	—	125	—	3.211	144.939	—	13	—	789	48.313	—	10.40%	—	24.57%	33.33%
foods	—	1.611	—	4.108	#########	—	152	—	276	689.401	—	9.44%	—	6.72%	23.48%
sanitation	—	473	—	412	107.525	—	48	—	38	21.187	—	10.15%	—	9.22%	19.70%

BEST COPY AVAILABLE

total	197,407	20,480	########	########	#########	21,779	4,775	#######	#######	#########	11.03%	23.32%	15.58%	14.08%	22.63%

BEST COPY AVAILABLE

[Appendix 5] Total Number of Candidates and Successful Candidates and Pass Rate According to Qualification grade, Occupational Field and Qualification types (1974-2000)

<professional engineer>

occupational field	qualification type	no. of candidates	no. of successful candidates	pass rate(%)
machinery	welding	1,144	147	12.85
	die and mold	245	57	23.27
	hydraulic machinery	1,786	238	13.33
	machinery making	812	135	16.63
	transportation vehicles	876	111	12.67
	industrial machinery	730	244	33.42
	air-conditioning and refrigerating equ	2,875	458	15.93
	construction machinery	2.022	365	18.05
	locomotive power train	42	4	9.52
	machinery manufacturing process design	251	42	16.73
metal	ferrous metallurgy	53	30	56.60
	metallic material	294	108	36.73
	metal finishing	73	28	38.36
	metal working	118	47	39.83
	non-destructive testing	309	48	15.53
hemical engineerin and ceramics	polymer product	118	39	33.05
	industrial chemistry	184	45	24.46
	chemical facility and equipment	587	161	27.43
	chemical plant design	630	158	25.08
	ceramics	73	23	32.86
electricity	generation transmission and distribution	3.216	298	9.27
	electric application	323	64	19.81
	railroad signal	208	43	20.67
	electric train	181	15	8.29
	building electronic facilities	8.598	366	4.26
electronics	industrial measuring and control	511	72	14.09
	electronics computer	131	28	21.37
	electronic application	79	21	26.58

ST COPY AVAILABLE

communication	electronic communication	1,450	148	10.21
	information and communication	1,742	167	9.59
shipbuilding	shipbuilding design	222	106	47.75
	shipbuilding	31	15	48.39
	marine machinery	74	20	27.03
aviation	aircraft body	44	21	47.73
	aeromotor	34	13	38.24
civil engineering	soil mechanics and foundation engineer	6.375	598	9.38
	civil engineering structure	6.151	726	11.80
	harbour and coastal engineering	887	120	13.53
	highway and airport	5.917	557	9.41
	railway	539	101	18.74
	water resource development	1.162	198	17.04
	water supply and sewage	3.247	349	10.75
	agricultural and fishery civil engineering	565	86	15.22
	civil engineering execution	43.988	3.907	8.88
	civil engineering quality testing	1.193	145	12.15
	survey and geographic space informatio	837	225	26.88
architecture	architectural structure	4.322	458	10.60
	building mechanical facilities	6.781	601	8.86
	architectural execution	49.856	4.686	9.40
	construction quality testing	870	144	16.55
textile	spinning	36	20	55.56
	wearing	20	7	35.00
	dyeing and finishing	37	11	29.73
	clothing	41	3	7.32
mining resource	underground resource development	155	49	31.61
	underground resource prospecting	23	14	60.87

BEST COPY AVAILABLE

	underground resource treatment	20	9	45.00
	explosives handling	550	96	17.45
formation processi	information management	2.375	233	9.81
	application for computer maintenance and organization	2.250	285	12.67
land development	urban planning	2.378	248	10.43
	landscape architecture	1.915	190	9.92
	industrial survey	228	56	24.56
iculture and fores	forest	103	49	47.57
	seed	175	40	22.86
	facility horiculture	26	9	34.62
	livestock	128	48	37.50
	forest product processing	3	1	33.33
	agricultural chemistry	54	25	46.30
ocean and fishing	ocean	37	20	54.05
	aquatic cultivation	117	26	22.22
	fishery	19	9	47.37
	fishery processing	54	24	44.44
industrial design	industrial and commercial product desi	23	5	21.74
energy	nuclear power generation	815	305	37.42
	nuclear fuel	70	30	42.86
	radiation management	295	66	22.37
safety management	electric safety	720	128	17.78
	machine safety	555	105	18.92
	chemical safety	248	76	21.84
	construction safety	5.835	564	9.67
	fire fighting facilities	3.374	165	4.89
	industrial hygiene management	696	111	15.95
	gas	1.016	103	10.14
environment	air pollution control	1.085	145	13.36
	water pollution control	2.019	181	8.96
	noise and vibration	524	101	19.27

BEST COPY AVAILABLE

	waste material processing	1.662	135	8.12
applied industry	factory management	315	69	21.90
	quality control	603	66	10.95
	packing	66	26	39.39
	food stuff	1.002	483	48.20
	applied geology	1.090	260	23.85
	geophysics	308	116	37.66
transportation	transportation	1.337	219	16.38

<master craftsman>

occupational field	qualification type	no. of candidates	no. of successful candidates	pass rate(%)
machinery	general machining	4.119	1.282	30.53
	boiler	608	163	26.81
	locomotive power train mechanics	94	9	9.57
	motor-vehicle mechanics	3.251	515	15.84
	construction machinery mechanics	362	39	10.77
	welding	2.692	849	31.54
	die making	885	165	18.53
	piping	661	172	26.02
metal	metal material	423	100	23.64
	surface treatment	56	20	35.71
	casting	366	100	27.32
	rolling	93	25	26.88
	iron making	21	3	14.29
	steel making	111	27	24.32
hemical engineerin and ceramics	hazardous mareria1 management	243	54	22.22
electricity	electric fercilities	1.382	334	24.17
	electric work	469	142	30.28
eletronics	electronic fercilities	757	119	15.72
communication	telecommunication facilities	81	9	11.11
aviation	aircraft maintenance	31	1	3.23
architecture	general buliding work	74	11	14.86
	carpentry master	94	28	29.79
textile	dyeing	21	12	57.14
riculture and fore	forest	6	3	50.00
safety management	gas	462	115	24.89
handicraft	precious metal processing	125	13	10.40
foods	cooking	884	73	8.26
	pastry	353	43	12.18

BEST COPY AVAILABLE

sanitation	beautician	66	10	15.15
	barber	1,019	109	10.70

<engineer>

occupational field	qualification type	no. of candidates	no. of successful candidates	pass rate(%)
machinery	general machinery	90.264	13.544	15.00
	mechatronics	341	21	6.16
	air-conditioning and refrigerating equ	29.742	3.891	13.08
	locomotive power train	686	32	4.66
	motor-vehicle mechanics	29.787	4.075	13.68
	motor-vehicle inspection	22.114	3.345	15.13
	construction machinery	104.512	17.703	16.94
	construction machinery mechanics	3.954	1.551	39.23
	machinery manufacturing process design	769	99	12.87
	jig and fixture design	662	70	10.57
	precision measuring	1,058	166	15.69
	welding	2,733	380	13.90
	press die design	1,024	45	4.39
	injection moulding design	966	68	7.04
	agricultural machinery	456	35	7.68
metal	metal(material)	5.843	2,047	35.03
	metal(refining)	830	97	11.69
	metal(processing)	1,148	140	12.20
	radiation nondestructive testing	20.877	3.079	14.75
	ultrasonic nondestructive testing	770	81	10.52
	magnetic nondestructive testing	972	231	23.77
	penetration nondestructive testing	651	241	37.02
	eddy current nondestructive testing	114	22	19.30
	leak nondestructive testing	28	4	14.29
chemical engineerin and ceramics	industrial chemistry	7.571	614	8.11
	explosives manufacturing	1.362	223	16.37
	chemical engineering	20.673	3.128	15.13
	ceramics	2.480	222	8.95
electricity	electricity	204.194	30.060	14.72

BEST COPY AVAILABLE

	electric work	287,524	39,384	13.70
	railroad signal	1,132	121	10.69
	electric train	1,607	408	25.39
electronics	electronics	23,444	3,704	15.80
	electronics computer	10,331	1,575	15.25
	industrial measuring and control	1,490	110	7.38
communication	information and communication	112,878	13,388	11.86
	radio operation	4,606	784	17.02
	radio and electronics	302	52	17.22
	radio telecommunication equipment	70,635	13,074	18.51
shipbuilding	shipbuilding	3,158	618	19.57
aviation	aviation	2,086	408	19.56
civil engineering	construction material testing	57,435	9,788	17.04
	railroad maintenance	733	58	7.91
	civil engineer	299,780	50,484	16.84
	survey and geographic space informatio	49,404	7,580	15.35
architecture	building facilities	32,430	3,364	10.37
	architecture	480,638	67,708	14.09
	interior building	42,077	3,249	7.72
textile	artificial fibre spinning	200	35	17.50
	spinning	345	58	16.81
	dyeing and finishing	384	47	12.24
	clothing	2,212	338	15.28
mining resource	underground water	857	67	6.78
	mining safety	7,341	1,287	17.53
	explosives handling	26,537	1,799	6.78
formation processi	information processing	447,319	85,942	19.21
	application for computer	23,636	1,928	8.16
land development	urban planning	24,178	4,185	17.31
	landscape architecture	44,211	6,461	14.61
	industrial survey	30,310	3,585	11.83

riculture and fore	seed	5.867	839	14.30
	facility horticulture	513	16	3.12
	forest management	4,011	775	19.32
	forest engineering	142	24	16.90
	forest seedling	853	131	15.36
	plant protection	3.679	855	23.24
	livestock	5,366	1,173	21.86
	forest product processing	481	72	14.97
	agricultural chemistry	255	22	8.63
ocean and fishing	marine environment	525	23	4.38
	marine resource development	67	3	4.48
	ocean engineering	274	34	12.41
	marine production management	414	126	30.43
	aquatic cultivation	3.654	815	22.30
	disease	619	174	28.11
	fishery	388	58	14.95
	fisheries processing	2.378	726	30.53
industrial design	industrial and commercial product desi	724	86	11.88
	visual design	195	30	15.38
energy	nuclear power	2.311	516	22.33
	heat consumption management	43.568	8.058	18.50
safety management	industrial safety	157,627	20.896	13.26
	construction safety	84,210	12,645	15.02
	industrial hygiene management	14,712	2,162	14.70
	fire fighting facilities	241,058	43,961	18.24
	fire fighting facilities(mechanical)	124,680	14,291	11.46
	fire fighting facilities(electronical)	96,113	24,435	25.42
	gas	34,512	4,748	13.76
environment	air pollution control	80.306	11,861	14.76
	water pollution control	126,852	17.713	13.96
	noise and vibration	9,942	1,671	16.81

BEST COPY AVAILABLE

applied industry	waste material processing	40,333	3.827	9.49
	process management	6.293	1,178	18.72
	quality control	84,723	17,766	20.97
	packing	218	16	7.34
	meteorology	1,972	572	29.01
	optics	303	23	7.59
	printing	1,041	178	17.10
	plate making	133	25	18.80
	applied geology	8.093	2,303	28.46
	elevator	5.321	577	10.84
	biochemical engineering	350	13	3.71
	food stuff	21,370	3.210	15.02
transportation	transportation	10,625	1,253	11.79

<industrial engineer>

occupational field	qualification type	no. of candidates	no. of successful candidates	pass rate(%)
machinery	lubrication management	81	8.628	10.68
	production machinery	107.986	15.750	14.59
	computer aided manufacturing	18.326	4.724	25.78
	machine fitting	12.107	4,033	33.31
	mechatronics	3,901	897	22.99
	production automization	10.453	2.472	23.65
	mechanical design	37,552	3.547	9.45
	air-conditioning and refrigerating equi	67,757	7.832	11.56
	boiler	34,971	4,410 .	12.61
	locomotive power train	2.110	141	6.68
	locomotive power train engine maintenar	3.331	817	24.53
	locomotive power train electricity	1.327	290	21.85
	train maintenance	7,266	2.952	40.63
	train switch	7,414	2,731	36.84
	motor-vehicle mechanics	166.785	18.326	10.99
	motor-vehicle inspection	59.988	7.783	12.97
	construction machinery	131,500	23.272	17.70
	construction equipment management	8.135	2.189	26.91
	jigland fixture design	3.387	713	21.05
	precision measuring	4.976	1.036	20.82
	mechanical measuring	1,253	96	7.66
	electric measuring	90	1	1.11
	physical measuring	148	4	2.70
	welding	28,430	6.895	24.25
	press die	8.698	1.675	19.26
	injection moulding	10.973	2.054	18.72
	machine facilities	2.261	903	39.94
	sheet metal	1,007	346	34.36
	boiler making	1.226	449	36.62

BEST COPY AVAILABLE

	agricultural machinery	1.434	123	8.58
metal	piping facility	5.899	1.707	28.94
	leak nondestructive testing	75	7	6.33
	metallic material	25.072	6.501	25.93
	metal finishing	816	178	21.81
	casting	3.497	1.378	39.41
	metallic refining	486	37	7.61
	radiation nondestructive testing	11.884	1.017	8.56
	ultrasonic nondestructive testing	4.939	374	7.57
	magnetic nondestructive testing	2.593	425	16.39
	penetration nondestructive testing	1.944	423	21.76
	eddy current nondestructive testing	45	5	11.11
chemical engineerin and ceramics	industrial chemistry	19.287	3.465	17.97
	explosives manufacturing	1.774	153	8.62
	ceramics	1.704	548	32.16
	rubber product manufacturing	40	6	15.00
	hazardous material management	31.187	4.370	14.01
electricity	electricity	279.958	35.414	12.65
	electric work	409.284	47.659	11.64
	electric equipment	14.493	1.956	13.50
	railroad signal	3.598	239	6.64
electronics	electronics	87.814	8.863	10.09
	electronics computer	20.569	3.579	17.40
	industrial measuring and control	4.643	819	17.64
communication	information and communication	84.683	10.576	12.49
	communication track	118.437	14.055	11.87
	office automation	174.322	28.543	16.37
	radio operation	20.123	3.031	15.06
	radio and electronics	233	34	14.59
	radio telecommunication equipment	139.574	18.531	13.28
	broadcasting and communication	4.330	263	6.07

shipbuilding	shipbuilding	3.490	583	16.70
aviation	aviation	18.632	2.999	16.10
civil engineering	contraction material testing	26.561	3.600	13.55
	railroad maintenance	2.728	794	29.11
	civil engineer	165.124	21.389	12.95
	survey and geographic space informatio	67.355	10	15.00
architecture	building facilities	54.455	5.898	11.46
	building general work	1.605	522	32.52
	architecture	341.255	41.806	12.25
	brick laying	314	176	56.05
	architectural carpentering	1.083	347	32.04
	wood joinery	570	211	37.02
	interior building	69.540	5.856	8.42
textile	artificial fibre spinning	35	5	14.29
	textile machine	248	182	73.39
	spinning	4.455	1.131	25.39
	textile fabric finishing	651	358	54.99
	textile machine	587	332	56.56
	fashion design	5.422	842	15.53
	tailoring	697	197	28.26
	Korean clothes	726	85	11.71
	machine and hand knitting	67	30	44.78
	spinning	6	3	50.00
mining resource	underground water	201	25	12.44
	mining safety	1.858	371	19.97
	explosives handling	19.529	1.827	9.36
	underground excavation	20	1	5.00
formation processi	information processing	660.422	98.718	14.95
	information technology	1.312	306	23.32
	application for computer maintenance and organization	46.100	4.308	9.34
land development	landscape architecture	34.633	5.519	15.94

BEST COPY AVAILABLE

	industrial survey	47.693	8.062	16.90
	industrial survey technology	56	18	32.14
griculture and fore	seed	12.751	1.707 ·	13.39
	facility horticulture	173	5	2.89
	forest	361	72	19.94
	forest management	236	10	4.24
	forest engineering	52	0	0.00
	forest seedling	1.329	363	27.31
	plant protection	2.152	336	15.61
	livestock	4.802	663	13.81
	forest product processing	400	50	12.50
ocean and fishing	ocean survey	515	144	27.96
	aquatic cultivation	4,121	1,002	24.31
	fishery	1,217	230	18.90
	fisheries processing	7.575	1.808	23.87
	diver	769	171	22.24
industrial design	industrial and commercial product desi	4.847	545	11.24
	visual design	3.557	470	13.21
energy	heat consumption management	8.728	477	5.47
safety management	industrial safety	309.115	44.540	14.41
	construction safety	52.087	8.652	16.61
	industrial hygiene management	24.544	2.957	12.05
	fire fighting facilities	186.576	27.694	14.84
	fire fighting facilities(machanical)	83.870	8.353	9.96
	fire fighting facilities(electronical)	50.875	9.505	18.68
	gas	133.731	12.658	9.47
environment	air pollution control	85.682	15.850	18.50
	water pollution control	141.056	19.403	13.76
	noise and vibration	3.460	452	13.06
	waste material processing	44.527	6.357	14.28
applied industry	process management	19.411	4.590	23.65

BEST COPY AVAILABLE

	quality control	91.483	16.732	18.29
	packing	2.608	338	12.96
	printing	2.068	277	13.39
	piano tuning	2.539	441	17.37
	projection	166	16	9.64
	elevator	5.929	321	5.41
	food stuff	60.744	7.488	12.33
transportation	transportation	280	4	1.43
handicraft	wood handicraft	240	74	30.83
	pottery handicraft	117	19	16.24
	precious metal processing	1,498	420	28.04
	embroidery	134	40	29.85
foods	cooking	4.009	265	6.61
	(Korean food)	2.397	177	7.38
	(Western food)	1.143	68	5.95
	(Japanese food)	289	11	3.81
	(Chinese)	138	8	5.80
	shellfish cooking	42	1	2.38
professional	job counsellor	29.382	2.241	7.63
office	social survey and analyst	7.157	380	5.30

BEST COPY AVAILABLE

<craftsman>

occupational field	qualification type	no. of candidate	no. of successful candidate	pass rate(%)
machinery	lathe	501.914	116.596	23.23
	grinding	36.817	9.976	27.10
	milling	120.431	28.164	23.39
	numerical controlled turning	93.798	38,101	40.62
	numerical controlled milling	38.141	21.046	55.18
	machine fitting	120.925	41.933	34.68
	mechanical drawing	399.483	81.621	20.43
	computer aided mechanical drawing	108.491	22.392	20.64
	air-conditioning and refrigerating equ	215.084	22.006	10.23
	boiler installation	226.283	29.416	13.00
	boiler handling	152,557	30.673	20.11
	locomotive power train engine maintena	2,881	1,001	34.74
	locomotive power train electricity	571	110	19.26
	train maintenance	4,268	1,389	32.54
	train swich	3.695	1,292	34.97
	motor-vehicle mechanics	763.082	150.052	19.66
	motor-vehicle body repair	8.627	2.539	29.43
	motor-vehicle inspection	138.389	25,194	18.21
	construction equipment engine maintena	49.295	8.751	17.75
	construction equipment chasis maintena	4.743	1.610	33.94
	crane operator	112.278	26.993	24.04
	excavating machine operator	670.832	143.328	21.37
	bulldozer operator	38.778	6.641	17.13
	overhead crane operator	41.462	10.044	24.22
	loader operator	86.586	21.256	24.55
	asphalt mixing plant operator	5.757	1.138	19.77
	dredge operator	1.727	479	27.74
	road-roller operator	15.913	2.893	18.18
	motor-grader operator	9.481	1,799	18.97

	asphalt finisher operator	2.249	567	25.21
	fork-lift truck operator	664.377	134.161	20.19
	air compressor operator	5.536	944	17.05
	loading equipment operator	2.835	635	22.40
	precision measuring	13.768	2.316	16.82
	mechanical measuring	994	101	10.16
	electric measuring	37	3	8.11
	physical measuring	40	2	5.00
	watch repair	783	213	27.20
	electric welding	691.109	155.256	22.46
	gas welding	100.955	20.383	20.19
	inert gas arc welding	29.022	13.535	46.64
	tool and die making	15.837	5.129	32.39
	extrusion die	1.282	188	14.66
	machinery maintenance	4.772	1.442	30.22
	sheet metal	53.124	18.367	34.57
	impact extrusion sheet metal	222	24	10.81
	boiler making	2.775	1.176	42.38
	steel structure	547	100	18.28
	agricultural machinery maintenance	53.516	28.662	53.56
	agricultural machinery operator	2.182	847	38.82
	industrial pipe fitting	21.278	9.482	44.56
	plumbing	109.691	36.600	33.37
metal	metal material testing	29.205	8.375	28.68
	heat treatment	71.750	17.994	25.08
	electric plating	6.787	3.867	56.98
	special plating	1.573	540	34.33
	casting	51.733	16.341	31.59
	pattern making	35.977	12.036	33.45
	cold rolling	1.437	433	30.13
	hot rolling	2.836	786	27.72

BEST COPY AVAILABLE

	iron making	1.568	577	36.80
	steel making	6.050	1.941	32.08
	steel making(converter work)	1.867	752	40.28
	steel making(electric furnace work)	216	58	26.85
	steel making(continuous casting work)	1.489	384	25.79
	furnace construction	3.059	504	16.48
	drawing	70	39	55.71
	forging	48	16	33.33
	radiation nondestructive testing	36.783	5.996	16.30
	ultrasonic nondestructive testing	11.956	1.175	9.83
	magnetic nondestructive testing	6.189	1.328	21.46
	penetration nondestructive testing	5.186	1.044	20.13
	eddy current nondestructive testing	746	196	26.27
	leak nondestructive testing	479	131	27.35
chemical engineerin and ceramics	chemical analysis	118.788	78.213	65.84
	rubber product manufacturing	8	1	12.50
	ceramics	2.514	1.912	76.05
	plastic forming processing(extrusion)	19	2	10.53
	plastic forming processing(squeezing)	70	1	1.43
	hazardous material treatment(first cat	1.852	127	6.86
	hazardous material treatment(second ca	1.399	200	14.30
	hazardous material treatment(third cat	2.627	330	12.56
	hazardous material treatment(forth cat	249.602	27.647	11.08
	hazardous material treatment(fifth cat	5.298	605	11.42
	hazardous material treatment(sixth cat	7.253	1.106	15.24
	hazardous material treatment	388.460	41.238	10.62
electricity	electric work	679.662	159.624	23.49
	electric equipment	365.835	126.116	34.47
	railroad signal	2.075	400	19.28
	electric train	109	13	11.93
electronics	industrial measuring and control and co	3.210	1.284	40.00

BEST COPY AVAILABLE

	electronic equipment	784.585	274.511	34.99
	electronics computer	274.635	62.293	22.68
communication	communication equipment	124.460	24,322	19.54
	communicaton track	115,351	20,209	17.60
	information equipment operation	1,027,705	322,115	31.34
	radio operation	41,418	6,868	16.58
	radio electronics	13,430	5,926	44.13
	radio telecommunication equipment	338,115	72,582	21.47
	broadcasting and communicaton	15,122	1,763	11.66
shipbuilding	hull construction	3,573	1,420	39.74
	hull outfitting	1,019	428	42.00
	marine engine maintenance	3,086	2,769	89.73
aviation	aircraft engine maintenance	68,355	13,643	19.96
	aircraft equipment maintenance	1,126	686	60.92
	aircraft elecrtonic equipment maintenar	24,881	6,542	26.29
	aircraft body maintenance	31,304	10,241	32.71
civil engineering	consruction material testing	139,206	39,850	28.63
	concrete	13,279	4,502	33.90
	paving work	158	8	5.06
	track maintenance	6,749	2,053	30.42
	stone work	819	270	32.97
	civil engineering drawing	44,382	13,203	29.75
	survey	245,334	50,959	20.77
	mapping	1,495	188	12.58
	drawing technical illustration	595	153	25.71
	aerial photography	362	45	12.43
architecture	computer aided architectural drawing	51,419	6,806	13.24
	tile laying	9,517	5,072	53.29
	plastering	12,512	7,118	56.89
	brick laying	68,430	27,883	40.75
	hot water system and Ondol	24,725	6,490	26.25

	glazier	1,229	160	13.02
	scaffolding	320	84	26.25
	architectural carpentering	36,796	13.755	37.38
	molding	1,289	380	29.48
	wood joinery	3,309	2,251	68.03
	metal joinery	1,889	415	21.97
	architectural painting	73,213	43,318	59.17
	wallpapering	20,404	4,530	22.20
	reinforced iron bar	1,850	894	48.32
	water proof work	2,279	639	28.04
	interior building	57,617	10,447	18.13
	architectural drawing	288,953	62,731	21.71
textile	spinning	766	498	65.01
	weaving machine control	19,952	10,595	53.10
	textile processing	198	8	4.04
	dyeing(dip dyeing)	4,176	3,495	83.69
	dyeing(textile printing)	9,240	7,550	81.71
	design of textile printing	338	221	65.38
	tailoring	5,251	3,613	68.81
	dress making	19,758	6,075	30.75
	Korea clothes	10,720	2,666	24.87
	machine and hand knitting(hand knittin	1,003	511	50.95
	machine and hand knitting(machine knit	25	11	44.00
mining resource	mine boring	7,223	3,352	46.41
	mining safety(machinery)	5,648	1,124	19.90
	mining safety(electricity)	2,860	493	17.24
	mining safety(explosive)	22,009	5,207	23.66
	mining safety(mining)	29,206	5,325	18.23
	mining vehicle machinery operation	536	195	36.38
	mining environment	61	31	50.82
	explosive treatment	8,151	2,360	28.95

BEST COPY AVAILABLE

formation processi	information processing	1,757.311	24,187	14.12
land development	landscape architecture	27,150	14,502	53.41
	industrial survey	24,326	5,373	22.09
riculture and fore	seed	57,948	27,291	47.10
	facility horticulture	631	72	11.41
	mushroom seeding	1,840	671	36.47
	vegetable cultivation	1,165	177	15.19
	fruit cultivation	542	85	15.68
	floral cultivation	8,608	3,029	35.19
	forest	1,739	602	34.62
	forest seeding	9,203	3,947	42.89
	plant protection	2,293	213	9.29
	livestock	15,623	12,303	78.75
	faburication of meats	12,567	2,798	22.26
	wood processing	6	1	16.67
	pulp and paper making	26	2	7.69
	material of woody part	4	1	25.00
ocean and fishing	aquatic cultivation	6,522	4,335	66.47
	fishery	2,712	2,317	85.44
	diver	4,029	1,120	27.80
industrial design	computer graphics operation	194,574	22,178	11.40
safety management	gas	690,253	51,280	7.43
environment	poisonous material handling	8,519	1,030	12.09
	environment	32,525	8,490	26.10
applied industry	optics	2	0	0.00
	photography	19,712	3,964	20.11
	micrographics	834	265	31.77
	lithograph printing	6,894	2,580	37.42
	screen printing	3,098	1,896	61.20
	electronic typesetting	8,376	4,927	58.82
	photographic plate making	6,734	4,166	61.87

handicraft	shoe making	309	137	44.34
	piano tuning	17.477	1.618	9.26
	projection	6.190	548	8.85
	elevator	73.879	21.931	29.69
	agricultural food processing	19.137	14.043	73.38
	aquatic food processing	4.137	3.562	86.10
	zootechnic food processing	14.113	6.546	46.38
	metal handicraft	5.622	3.367	59.89
	wood handicraft	7.738	3.387	43.77
	pottery handicraft	7.582	4.280	56.45
	stone handicraft	451	157	34.81
	precious metal processing	6.778	3.716	54.82
	lapidary	1.154	664	57.54
	gem identifying	25.922	2.253	8.69
	furniture making	9.301	5.491	59.04
	mother of pearl work	78	33	42.31
	lacquer ware	125	96	76.80
	artificial flower handicraft	6.111	1.103	18.05
	seal handicraft	919	444	48.31
	embroidery(hand)	3.306	1.532	46.34
	embroidery(machinery)	2.586	1.513	58.51
	furniture painting	860	360	41.86
	metal coating	11.789	2.766	23.46
	advertisement painting	52.986	16.709	31.53
	mounting	673	170	25.26
foods	pastry	75.591	20.827	27.55
	confectionery	122.278	35.980	29.42
	Korean food cooking	1.298.706	314.206	24.19
	western food cooking	240.825	58.824	24.43
	Chinese food cooking	23.756	5.162	21.73
	Japanese food cooking	87.563	15.757	18.00

BEST COPY AVAILABLE

sanitation	shellfish cooking	12,715	2,049	16.11
	bartender	14,230	4,373	30.73
	beautician	77,091	22,456	29.13
	barber	1,365,515	277,822	20.36
	laundry	51,164	10,504	20.53

CR 02-02

Vocational Training and Technical Qualification Systems in Korea and South Africa

---

Published : February 2002/3/29
Published by : Korea Research Institute for Vocational
Education and Training
Address : 15-1, Chongdam2-dong, Kangnam-gu,
Seoul, 135-949 Korea
Tel. : 82 -2-3485-5021
Fax. : 82-2-3485-5200
E-mail : yhlee@krivet.re.kr
Web : http://www.krivet.re.kr
Registration No. : 16-1681 (11 June 1998)
ISBN : 89-8436-406-1 9330

Price : Won

Copyright ©Korea Research Institute for Vocational Education and Training (KRIVET)

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

☒ This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.

☐ This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").

EFF-089 (3/2000)